DOCUMENT RESUME

ED 451 135 SP 039 727

AUTHOR	Klein, Hans E., Ed.
TITLE	Creative Interactive Teaching: Case Method & Other Techniques. Selected Papers of the International Conference on Case Methods Research & Application (16th, Caceres, Spain, 1999).
INSTITUTION	World Association for Case Method Research and Application, Needham, MA.
ISBN	ISBN-1-877868-14-0
PUB DATE	2000-00-00
NOTE	510p.
AVAILABLE FROM	World Association for Case Method Research & Application, 23 Mackintosh Avenue, Needham, MA 02492-1218; Tel: 781-444-8982; Fax: 781-444-1548; E-mail: wacra@msn.com; Web site: http://www.wacra.org.
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	EDRS Price MF02 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Accounting; Business Education; *Case Method (Teaching Technique); Computer Uses in Education; *Discussion (Teaching Technique); Distance Education; Educational Innovation; Educational Research; Educational Technology; Elementary Secondary Education; Females; Foreign Countries; Global Approach; Higher Education; Inservice Teacher Education; *Interdisciplinary Approach; Internet; Olympic Games; Partnerships in Education; Preservice Teacher Education; Simulation; Teaching Methods
IDENTIFIERS	Canada; Cuba; England; Lebanon; New Zealand; Slovenia; Spain; Venezuela

ABSTRACT

This book presents a selection of papers from the international, interdisciplinary conference of the World Association for Case Method Research & Application. Papers are categorized into seven areas: (1) "International Case Studies" (e.g., event-based entrepreneurship, case studies on consumer complaints, and strategic quality management in an internationalized university department); (2) "Teaching Change Across Disciplines" (e.g., student-designed board games, interdisciplinary collaboration to improve instruction, and case method for applying spreadsheets in computer engineering education); (3) "Internet Technology and Teaching and Learning" (e.g., Internet marketing, distance education, and the role of case studies in studying computer technology in education); (4) "Classroom Models and Innovative Approaches" (e.g., case methods in environmental impact, case study in business calculus classes, and audit evidence); (5) "Case Studies, Simulations, and the Learning Process" (e.g., the virtual case, the entrepreneurial creative case method, and case studies in agriculture teaching and learning); (6) "Assessing Benefits and Differences" (e.g., differences in assessment of case studies, assessment of faculty perceptions, and women in international business case studies); and (7) "Building Bridges" (e.g., conducting a case-based inter-university faculty exchange, research in developing countries, and teaching business ethics in international courses). (SM)

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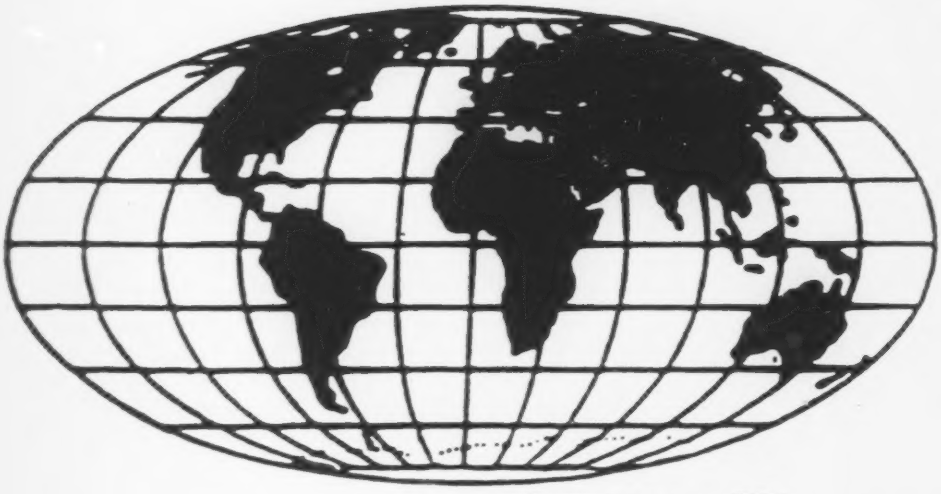
Case Method & Other Techniques



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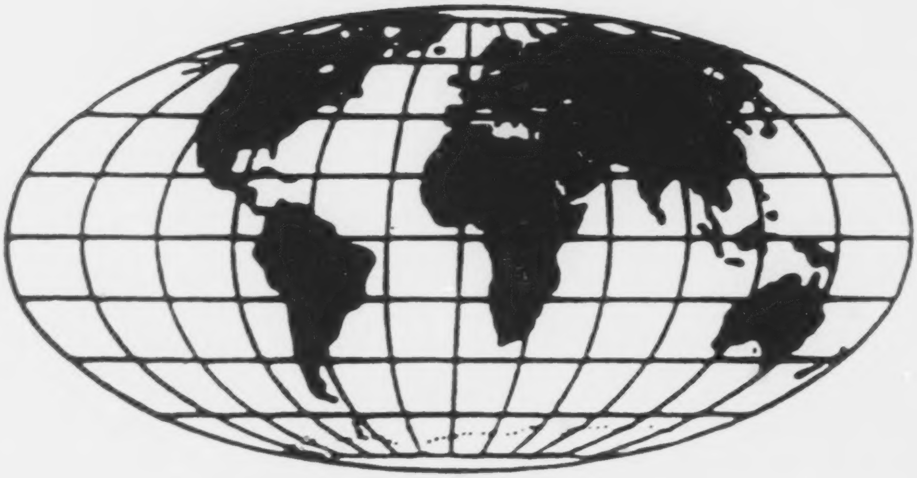

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Produced and distributed by
WACRA® - World Association for
Case Method Research & Application
23 Mackintosh Ave
NEEDHAM (BOSTON) MASSACHUSETTS 02492-1218 U.S.A.
Tel. +781-444-8982 FAX: +781-444-1548 e-mail: wacra@msn.com
http://www.wacra.org

Conference Office: Rensselaer Polytechnic Institute - Lally School of Management & Technology
In North America call 1-800-523-6468, Other countries +860-548-2438 Fax. +860-547-0866

Library of Congress Cataloging in Publication Data

Klein, Hans Emil, 1939

Case Method Research and Application:
Creative Interactive Teaching
Case Method & Other Techniques
Selected Papers of the Sixteenth International Conference
on Case Method Research & Application
Hosted by The University of Extremadura
CÁCERES, SPAIN

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1. International Case Studies
2. Teaching Change Across Disciplines
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ISBN 1-877868-14-0

Printed and bound by OMNI PRESS, MADISON, Wisconsin United States of America

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ACKNOWLEDGMENTS

The editor wishes to express his appreciation to the individuals who have participated in the double blind peer review process. Their assistance in reviewing manuscripts and making suggestions represented an important contribution to the success of WACRA® '99 in Cáceres, Spain and facilitated the production of this volume. Special thanks go to Denise Smith, Amelia Klein, and Joëlle Piffault for coordinating and administering the peer review process and to Jim Camerius for the case peer review process and directing of the Case Writers' Colloquium.

Kamal Abouzeid, Abdel Agami, Douglas Allen, A. J. Almaney, Robert Anderson, Marie-Louise Andersson, Ed Arnheiter, Roger Brown, Michael Budden, Yuangqian Chen, Lal Chugh, Brian Clement, James Clinton, Larry Crumbley, Marianne D'Onofrio, George Dupuy, Linda Elksin, Phil Fisher, Anne Marie Francesco, Martha Fransson, Maria Elena Galvez-Martin, Lou Gingerella, Donald Grunewald, Dick Hamlin, Pierre Hugron, J. David Hunger, Christine Irvine, Jane Jackson, Anita Jackson, Fred Jacobs, James Keenan, Bob Klein, Chris Kolar, Barton Kunstler, Nelson Lacey, Lawrence Lamont, Irene Lange, Chan Lee, Steve Lucas, Violet Malone, Shirley Malone-Fenner, Keith Martin, Joseph McHugh, Ellen McMahon, Bud Miles, Joseph Miller, Larry Minks, Marianne Nelson, Denise Nitterhouse, Sean O'Connor, Peter Olson, Diane Paravazian, Ronald Patten, Spero Peppas, Joëlle Piffault, Ernestine Riggs, Marlene Rosenkoetter, Maria Roxas, Juanita Roxas, Anne Schroer-Lamont, Genie Scott, John Seeger, Guido Slangen, Stephan Sokalski, Lynn Sorensen, Shanthi Srinivas, William Stevens, Jane Stoneback, Mary Sudzina, Rocco Vanasco, Edward Weiss, John Zerio gave generously of their time, reviewed more than 125 papers and contributions and moderated forty-seven sessions during the conference. Seventy-eight papers and contributions were accepted for presentation at the conference and fifty-two papers were selected to be included in this volume.

To express our gratitude to our hosts, we would like to quote Professor Olga Molina de Paredes of the University de Los Andes in Mérida, Venezuela:

> *Los organizadores del evento, el Dr. Ricardo Hernández y su amable esposa, Dra. Teresa Carriedo, y sus colaboradores, no descuidaron ningún detalle para que este Congreso se desarrollara exitosamente. Desde disponer de los equipos requeridos para las exposiciones, jóvenes guías y traductores, autobuses para trasladarnos de un lugar a otro, hasta los tours organizados para cada día al finalizar las conferencias hacia distintas ciudades y lugares históricos, todo resultó como estaba planificado. Las cenas espectaculares, deliciosas, donde se disfrutaba de los vinos españoles, de la comida y de la amistad que se había generado en el seno del congreso, son dignas de resaltar. ¡Lo disfruté a plenitud!*
>
> *Finalmente, terminó el evento y llegó la hora de regresar con todo ese cúmulo de conocimientos, experiencias y con una alta motivación de dar a conocer en nuestro medio a Wacra, a fin de entusiasrnar a mis colegas y regresar con ellos a compartir esta*
>
> *¡INOLVIDABLE EXPERIENCIA! GRACIAS AMIGOS, ¡HASTA PRONTO!*

Thank you to Richard LeMay and Rensselaer Polytechnic Institute for supporting the WACRA® Conference Center at the Lally School of Management & Technology in Hartford, Connecticut and to Denise M. Smith for her dedication to the completion of this project.

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PREFACE

This volume continues the annual presentation of 'Selected Papers' resulting from international, interdisciplinary WACRA® conferences devoted to the consideration of the case method, simulations, games, videos, distance education and other interactive methods as research, teaching, training and learning techniques. Included also is a selection of international cases.

During the last 30 years the case method has enjoyed a steady and continuing increase in popularity and use. For example, applications in the field of education have increased in the past several years and continue to increase dramatically. The International Association for Management Education (AACSB), the American Accounting Association and many leaders in university-level business education encourage the use of the case method and other interactive techniques to more effectively reach students, especially undergraduate accounting students who, in recent years, have turned to more "exciting" fields of study.

In its Preamble to Business Accreditation Standards (http://www.aacsb.edu), the AACSB states:

> *The complex demands on management and accounting education mirror the demands on organizations and managers. Challenges come from:*
>
> - *strong and growing global economic forces,*
> - *conflicting values,*
> - *changing technology in products and processes, and*
> - *demographic diversity among employees and customers.*
>
> *In this environment, management education must prepare students to contribute to their organizations and the larger society and to grow personally and professionally throughout their careers. The objective of management education accreditation is to assist programs in meeting these challenges.*
>
> *Accreditation focuses on the quality of educational activities. Standards set demanding but realistic thresholds, challenge schools to pursue continuous improvement, and provide guidance for improvement in educational programs.*
>
> *AACSB member schools* reflect a diverse range of missions. That diversity is a positive characteristic to be fostered, not a disadvantage to be reduced or minimized. Therefore, one of accreditation's guiding principles is the tolerance, and even encouragement, of diverse paths to achieving high quality in management education. Thus, the accreditation process endorses and supports diversity in management education.*
>
> *Acknowledging the diversity within AACSB, all member schools share a common purpose -- the preparation of students to enter useful professional and societal lives. Interaction among students and faculty accomplishes this purpose most directly. Accordingly, the accreditation review focuses on a school's clear determination of its mission, development of its faculty, planning of its curricula, and delivery of its instruction. In these activities, each school must achieve and demonstrate an acceptable level of performance consistent with its overall mission while satisfying AACSB standards. Substantial opportunity remains for schools to differentiate themselves through a variety of activities.*
>
> *Just as managers face rising expectations for their performance and the performance of their organizations, programs in management education also should anticipate rising expectations, even within a given mission. No fixed curriculum, specific set of faculty credentials, single type of faculty performance, or approach to instruction will suffice over time. Accordingly, programs in management education, and the accreditation process, must*

> *focus not only on the present, but also on the preparation for the future. The processes used to strengthen curriculum, develop faculty, improve instruction, and enhance intellectual activity determine the direction and rate of improvement. Thus, these processes play an important role in accreditation, along with the necessary review of inputs and assessment of out-comes. As part of each school's effort to prepare its students for future careers, the school should provide a total educational experience that emphasizes conceptual reasoning, problem-solving skills, and preparation for life-long learning.*

WACRA® conferences are designed to assist faculty and administrators in reaching these goals. Delegates from around the world, including representatives from affiliated case method oriented organizations routinely present their ideas and proposals on interactive, interdisciplinary, intercultural and international teaching and learning.

Presentations and discussions of scholarly work are primary means of communicating knowledge. Today, the environment and the opportunities are increasingly international in scope. Scholarship and research, to continue to fulfill their role in society, have to adapt to this new environment. To facilitate research and promote cooperation internationally and across disciplines, WACRA® - The World Association for Case Method Research & Application and ACT - The Academy for Creative Teaching, conduct international conferences and publish this series of 'Selected Papers' with the purpose of:

- creating an International Forum for the discussion of contemplated, on-going or completed case method research,
- facilitating the exchange of experiences with existing case method applications and
- providing encouragement and an interdisciplinary, international structure for the discussion, development and dissemination of new avenues and approaches to teaching and training.

Months before the infamous "Wall" came down in 1989, WACRA® became actively involved in building bridges to academia in Central and Eastern Europe. This process has enabled colleagues from a variety of Central and Eastern European countries to participate in WACRA® conferences, to present their work to an international audience and to engage in academic discourse and exchange of ideas on a truly international scale.

These contacts contributed to the creation of Case Method Organizations in The Czech Republic and Lithuania: CZACRA - The Czech Association for Case Method Research & Application in Brno, Czech Republic and BACRA - The Baltic Association for Case Method Research & Application in Panevezys, Lithuania. Since then, the initial contacts have evolved into full partnerships between WACRA® and Central and Eastern European institutions and also among WACRA® members from all over the world. Members have collaborated in many projects and are cooperating on case writing, case teaching and training, management consulting, and curricula planning, to name just a few projects.

Delegates from 19 countries attended the conference in Cáceres, Spain. Host of WACRA '99 was Professor Dr. Ricardo Hernández Mogollón from the University of Extremadura, Cáceres, Spain. All papers and contributions presented at the conference were selected through a double blind peer review and out of this pool the papers in this volume were selected for publication. The contributions are arranged in the following broad areas: (1) International Case Studies, (2) Teaching Change Across Disciplilnes, (3) Internet Technology and Teaching and Learning, (4) Classroom Models and Innovative Approaches, (5) Case Studies, Simulations, and the Learning Process, (6) Assessing Benefits and Differences, and (7) Building Bridges.

While editing the papers included in this volume, I have tried to maintain the character and thrust intended by the authors, despite the need to make, in some instances, alterations and amendments, in other cases, assisting the author in rewriting the paper. I have retained, to allow for flavor, alternate accepted (British) spelling, and have permitted slightly 'unorthodox' sentence structures to prevail, as long as the meaning was not distorted. In all, I have tried to maintain the author's opinions, views, suggestions and thoughts.

Hans E. Klein, Editor

CHAPTER ONE

EVENT-BASED ENTREPRENEURSHIP: THE IMPACT OF CASE STUDY LESSONS LEARNED FROM THE ATLANTA CENTENNIAL OLYMPICS TO SYDNEY 2000 STRATEGIES

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Abstract

This paper presents a number of case study lessons learned by successful and unsuccessful small businesses during the 1996 Summer Olympic games in Atlanta, Georgia; and constructs a descriptive model from which implications and recommendations are drawn for small businesses interested in the 2000 Summer Olympic games in Sydney, Australia.

There were two major reasons for undertaking Olympic businesses case studies. The first purpose is to develop a theoretical framework of critical factors to businesses specifically catering to the significant increase in perceived demand for goods and services that arise when staging an Olympics.

The second major purpose of undertaking Olympic businesses case study is to apply the lessons learned from the descriptive model in constructing a normative model for businesses gearing up for a future Olympiad.

Businesses expecting to make a quick fortune out of the Sydney Olympics are likely to be disappointed, as the experiences of entrepreneurs in Atlanta indicate that it would not be an easy task. The study found that the businesses most likely to be successful are ones that are already established with surplus funds to deploy into new ventures in which they can afford to take risks.

The Olympics in Australia is less than two years away, and hopefully, they will learn and benefit from the painful lessons in Atlanta. The Case study lessons presented in this paper provides specific normative lessons on how businesses can make or lose money during special demand conditions such as during an Olympics period.

INTRODUCTION

When Atlanta, GA was first awarded the opportunity to host the 1996 Olympic Games, the business community anticipated a windfall in the profits generated from the increased business that the anticipated 2.5 million visitors would bring. Not only was the city of Atlanta itself expected to benefit, but outlying areas within 100 miles of Atlanta were also told by the Atlanta Committee for the Olympic Games [ACOG] that they could profit from the Olympic rush. Basing projections on the experience in

Barcelona where thousands of tourists each day visited towns more than 100 miles from the city, ACOG raised the hopes of many small business owners.

This paper presents some case studies and some preliminary thoughts about small business success and failure during critical periods of intense demand, specifically the 1996 Atlanta Olympics period. Seven small businesses were interviewed about their experiences. They were specifically asked about lessons learned and what they would tell their counterparts in Sydney during the 2000 Olympics.

RESEARCH OBJECTIVES, METHOD AND SAMPLE SELECTION

PURPOSE OF UNDERTAKING CASE STUDY BASED RESEARCH

There were two major reasons for undertaking Olympic business case studies. The first purpose was to develop a theoretical framework of critical factors to businesses specifically catering to the perceived demand for goods and services that arise when staging an Olympics, in order to construct a descriptive model.

The second major purpose of undertaking Olympic businesses case study was to apply the lessons learned from the descriptive model in constructing a normative model for businesses gearing up for a future Olympiad.

Therefore, an Olympic Businesses Interview Schedule and Questionnaire was administered to a sample of the Atlanta Olympic businesses market in order to apply the lessons learned to the Sydney Olympics. Researchers such as Patton [1990] and Zikmund [1991] have emphasized that case studies are ideal for identifying the nature of research problems or identifying potential relationships among variables that can be then utilized as the basis for investigating the population.

JUSTIFICATION OF CASE STUDY APPROACH

Adoption of a case study approach in researching Olympic businesses provided opportunities to conduct exploratory research into specific factors that influenced the undertaking of the Olympic business process within an organization. In business disciplines such as accounting and marketing, it has been recognized that case studies are likely to provide more meaningful results in examining complex relationships and transactions than research methods that rely solely on quantitative analysis [Bonoma, 1985; Kaplan, 1986]. While quantitative analysis can indicate certain relationships within an organization, it cannot identify the actual inner or interpersonal transactions that bring them about [Diesing, 1972].

Use of a case study enabled the present researchers to consider potential insights into how organizational and environmental factors interacted to affect the Olympic business process. Furthermore, the case study provided a firm basis for theory building and hypothesis development. Patton [1990] argued that there are no rules for sample size in qualitative inquiry. Sample size depends on what the investigator wishes to know, the purpose of the inquiry and what can be done with available time and resources. Given that a primary reason for the case study was to obtain lessons for use in Sydney, and also due to the need to keep the data manageable, it was felt that seven information-rich case studies would be appropriate for purposes of this research study.

CASE SELECTION AND DESCRIPTION

The present investigator utilized a chain sampling approach to select seven appropriate case studies for analysis [Patton, 1990]. This method involved first asking two academics who were familiar with Olympic businesses to nominate an organization [and key personnel within that organization] that they felt had significant involvement in the Atlanta Olympic business process. Similarly, each company interviewed was asked to nominate another, until 10 case study organizations were interviewed.

DATA COLLECTION METHODS

The main body of data was generated from interviews using a pre-designed Case Study Questions Protocol. In addition to interviews, data were collected through on-site observations and relevant documents. Prior to conducting the interviews, the Case Study Questions Protocol was examined by two University academics who were experienced in field research techniques. All interviews were audio taped and subsequently transcribed for analysis. Field notes were also taken to act as a back up for audiotapes and to document informal on-site observations. During and after each site visit, a full account of the visit was prepared by drawing on interview transcripts and field notes.

INTERVIEWS

Two key staff members from each organization, at the CEO or COO level, and two staff from the organization's sales area were interviewed. All of those interviewed were heavily involved in Olympic business transactions during the Atlanta Olympics. Meetings were held with these four personnel over a three-week period with each meeting lasting 60-90 minutes. Non-standardized/generative questions were employed in the case study. Follow-up telephone calls were also conducted to clarify statements.

DOCUMENTS

Whenever a piece of paper that was considered significant came to attention, a request was made to inspect it and/or have a copy made. Relevant documentation to the transaction obtained included an investor information memorandum, correspondence between the organization and investment bankers, and intra-firm memorandums. In each document collected an extraction was made of the notable content.

OBSERVATIONS

These were typically unstructured, though key factors were identified for consideration. For example, observation of the office environment, the age and education levels of key staff and the general attitude of staff toward Olympic business transactions might provide insights into why the organization decided to invest heavily in Olympic based business.

METHOD OF DATA ANALYSIS

A Case Study Description was developed utilizing participants' responses to the Case Study Questions Protocol, field notes and documents. Transcripts of audiotapes were also utilized in developing the Case Study Description.

DATA QUALITY CONTROL

The two investigators transcribed audiotapes of all interviews. The other two researchers, to ensure accuracy of entry, reviewed these transcripts. The Case Study Description was inspected by all those interviewed

SUCCESS LESSONS

Many small businesses made money during the Olympics. Niche players who carefully watched their risk faired very well. The more established the business, the higher the probability of success.

> *Anyone looking for gold during the 1996 Olympics should have looked on Wall Street rather than in Atlanta. The Dow Jones industrial average surged 4.7 percent in the two trading weeks of the Olympic Games. Even the troubled NASDAQ composite index of*

> *smaller-capitalized stocks rose 2.5 percent. Some of the biggest gainers were Georgia-based companies that sponsored the Olympics. [Walker, 1996]*

In the words of an established foreign exchange company principal: "It was very interesting and fantastic. We prepared for one and a half years and it comes so quickly. I expect to do well in Sydney!"

HORROR STORIES

Unfortunately for business owners, both those who rented expensive venues inside the city of Atlanta as well as those who looked forward to welcoming tourists to their charming historic southern towns, early disappointment turned into disaster. Especially for business owners who started businesses exclusively for or primarily for the dream of acquiring Olympic gold and invested large amounts of up front capital in anticipation of large profits, the results ranged from disappointing to devastating.

To the surprise of all, the masses never came. The tour buses sat empty, the area's attractions remained relatively unseen by fresh eyes and few rental homes hosted vacationing visitors. For many entrepreneurs east of Atlanta, dreams of big profits melted into heartache.

"It really was a bomb," said the owner, 50, whose home-rental business [Case Study #2] gained her national and international media attention before the Games. She put together a highly organized effort to rent out double-occupancy "bed-and-breakfast" units, which included a bedroom and bathroom in people's homes.

The homeowners were to provide breakfast, laundry service and transportation to and from Olympic events or the MARTA rail system. The program was considered unique because homeowners were able to remain in their houses and avoid the risk of leaving their homes open to unscrupulous renters. The units rented for $925 to $1,325 a night. The owner took 20 percent of the fee; the homeowner kept the rest. She expected to make millions, she said. By this spring, The owner had 2,700 available units, but business already was falling flat. In May she sold shrimp in the front yard of her south Rockdale County home to pay the phone bill. In June, business hadn't gotten much better. After 17 Olympic days, the owner rented out 10 units, nine of them after she dropped the amenities and then the price to about $300 per night.

All told, the owner ---who refinanced her house to raise cash for the venture, spent $8,000 to remodel her garage into an office and worked five years on the project ---lost more than $23,000. Her only real revenue was the $10 application fee each client paid to register a home with her service.

The owner said her business failed for two reasons. "My program could not work until supply and demand kicked in, when the hotel rooms were gone," she said, pointing out that hotels rooms never actually sold out despite the pre-Games hype. "I think the concept of private housing was totally rejected" [Sanford, 1996].

The next sections provide summarized accounts of the case studies conducted.

CASE STUDY DESCRIPTIONS AND GENERAL ISSUES

CASE STUDY #1 - WHOLESALE RESTAURANT EQUIPMENT DEALER

This 20+ year old business and its 53 employees experienced only positive financial and business results from the 1996 Olympic experience. No new business lines were established for the games, and business continued from its one existing location in metropolitan Atlanta. The business simply expanded its current line of equipment and sold to ACOG and Olympic vendors and existing restaurants. Revenues from the Olympic Games increased by 70-80%, and the only additional expenses were for additional stock and overtime for some of its employees. Overtime management carefully controlled costs. The only problems experienced by this company involved the difficulty of making deliveries because of the traffic and the closed streets. Many of the new start Olympic vendors bounced checks, but the existing company controls allowed the dealer to quickly repossess the collateral equipment.

The owner felt that much of the dealership's profitability was because he was able to anticipate the need for increased levels of stock and then buying that stock when the price was right. He was able to do so because of his years of experience in the business, and his knowledge of the industry. He also felt that a major competitive advantage for his company was that he knew what type of equipment that the local ordinances allowed. This knowledge allowed him to ensure that he had the right equipment to meet the local codes--an advantage not shared by new or out of town competition.

Another important lesson learned from other short term, high profile events used to his benefit in Atlanta was that leasing equipment to customers does not work. Most new start-ups are not financially eligible for the leasing financing. The dealer had previous experience with sell/buy back agreements, and used this extensively with vendors in Atlanta during the Olympics. Because of the company's established position in the industry, accurate information about the used equipment market was used to structure these deals, and the owner found that they were "very profitable" for his business.

CASE STUDY #2 - HOME RENTAL BUSINESS

This business was specifically started for the Olympics to provide bed and breakfast type housing for visitors as a supplement to the hotels. There was one employee and the owner served as manager. The primary motivation to start the business was to make sufficient money to retire. The owner/founder felt that this was her "big chance" to make a "real killing."

Instead she lost over $23,000. She spent $8,000 to remodel her garage into an office and worked five years on the project only to find that out of 2700 bed and breakfast locations registered with her, she rented only10 at rates reduced from $1000/night to $300/night. Her agreement with the homeowner who provided breakfast, laundry service and transportation to Olympic events was that company would take 20% and the homeowner would get the rest.

The owner, in retrospect felt that her best advice to others would be "Do not put any money that you cannot afford to lose into a business dependent on the whims of visitors." She also felt that it was important not to spend money on establishing a home office unless it ultimately enhanced the value of your home or unless it will be used after the event.

CASE STUDY #3 - FROZEN LEMONADE STANDS

This company was started as a new venture to take advantage of an opportunity to provide a frozen lemonade drink to visitors at the Atlanta Olympics. This is a franchise with home offices in Rhode Island--in the Northeastern United States, about 800 miles from Atlanta. The concept for setting up sites during the Olympics was to earn needed capital to continue the business after the Olympics, to gain exposure for the product which was new to the Atlanta area, and to test some marketing ideas. There was modest support from the franchiser--primarily in the form of reduced wholesale prices and some corporate staff came to Atlanta to attend the games and to work in the stands.

The number of employees varied from a handful to nearly 50 at the busiest time of the Olympics. The overall cost of site rental for 4 fixed locations and 3 roving locations was $128,000. Six months after the games, the owner was still trying to determine how much money he lost due to:

- problems with a complicated City of Atlanta business permit process,
- inadequate inventory control,
- stiff competition from Olympic corporate sponsors such as Coca Cola,
- competition from a competing lemonade product,
- competition from hundreds of other smaller food/drink vendors which the City of Atlanta allowed to operate where only 10 were supposed to be,
- the city's seemingly arbitrary closing of streets where he had set up kiosks,
- lower than expected attendance at the games, and finally,
- the Olympic Park bombing which kept significant numbers of attendees away from the downtown area.

"I remember driving down the deserted interstate on the first morning of the games, sobbing out loud. There was no traffic, and no traffic meant I wasn't going to make any money, and I had a payroll to meet and money that I had to repay to my friends."

The owner felt that his original plan had been too ambitious. Too much money was spent for permits, which were not worth what they sold for. They provided no territory protection. Because of the complexity of the Olympic site, the owner felt that multiple locations were not necessarily better than one good location.

When things start to "fall apart"-- non-permit vendors setting up next to you, changing traffic patterns, or help not showing up for work, then a vendor must recognize that the difficulty of moving supplies from one location to another may be overwhelming due to unexpected circumstances such as street closings or over or under control by City officials.

The owner also feels strongly that untrained staff can be worse than no employees at all. Going into an event such as the Olympics and having employees in multiple locations mean that in most cases there will be wasted product, inadequate employee supervision, poor inventory control, and transportation problems.

Finally, unanticipated, unregulated competition means that prior sales projections may turn out to be meaningless. The owner would never undertake this type of activity again, unless he felt that more guarantees were available from the governing institutions that would protect early investments by first movers. He feels that the unregulated ambush tactics of unlicensed vendors who were not controlled and simply moved quickly to a new location when shut down by authorities at the old location cost him most of his planned profits. He senses that the authorities just "gave up" after a while, and that in downtown Atlanta during the Olympics it became a war of survival--all against all--with vendors carts pushing against each other to occupy the prime locations.

CASE STUDY #4 - BEVERAGE DISTRIBUTOR

The business distributes soft drinks and related beverages to restaurants, coffee shops, etc., and employs 32 full time associates. The business was not established for the Olympics and has been in business in Atlanta for over 10 years at the same site. No major advertising was done for the Olympics, but the owner was able to get on a list issued by ACOG as an approved vendor.

Revenue from the Olympics was not totaled separately, but the owner knows that sales were especially heavy during the period prior to the Olympics because his usual customers were buying more in anticipation of increased sales. Although, the owner experienced no special problems with the Olympics, he believes that the experience would have been more problematic should he have departed from his usual payment policies by extending credit to new customers. Many of his fellow businessmen did extend credit to new start-ups and suffered financial loss because of defaults. He knows of instances in which buyers left town without paying or filed bankruptcy. The latter includes several major restaurant start-ups.

The owner feels that it is important to continue doing business as usual, and not to vary from your established policies because you think you can "make a killing in a short time." "When something looks like it's going to be too good to be true, it usually is."

CASE STUDY #5 - PARK CRAFT RETAIL LOCATION

This is an established craft business employing 3 associates in a retail location that rented additional booth space in the Stone Mountain Park Olympic site in hopes of attracting tourist business to purchase her new line of Olympic theme dolls, sculptures, etc.

The owner estimates that she lost about $10,000 because she created items with an Olympic theme, which she was unable to sell, and has little hope of selling after the games. Visitors stayed away from Stone Mountain Park, a major tourist attraction for Atlanta and the Southeast. Nobody knows exactly why this occurred, even with Olympic events located there, but the extra help she paid to work the booth when she couldn't be there, and the extra inventory that she created caused a loss much larger than she had imagined.

She cautions that predictions about traffic flow may not be accurate, and that new merchandise with a limited life span can be extremely costly to a retail shop's bottom line.

CASE STUDY #6 - CURRENCY SERVICES AND FOREIGN EXCHANGE

This company is a foreign currency exchange business that sold cash bank notes, traveler's checks, and international bank drafts. A United Kingdom based organization that has many years of experience with foreign exchange and international travel. In anticipation of Olympic business, the company established 4 locations with other business partners. Two locations were downtown near the Olympic Park, and two were uptown near the retail and residential heart of the city.

The principal felt that it was not a very successful business project. Answering questions with a quiet face and a very slow soft voice he describes a changing market where "people who travel no longer need large amounts of currencies or travelers checks because they are able to use credit or debit cards in place of the currency." In his mind the overall business world of foreign exchange is changing very quickly via the use of these smart cards and the overall computerization of the industry. "Atlanta was disappointing in that overall the business did not do well as measured by the kinds of activities and the low volume. We had hoped to generate more business."

Still, he is looking for a company to do the same business in Australia and actually has people from Australia who are working with the company now in order to get to know a little more about this business after the Atlanta experience. One major lesson learned was to be located in high traffic areas.

Another problem was that his company had no contingency plans for unexpected events such as the Olympic Park bomb. This had a major impact on traffic and seemed to put everyone in a down mood where they didn't spend as much money as they were prior to the bombing.

The owner feels that the Olympic committee is a very closed society, and when one wants more information, they are generally not willing to give that information in a timely fashion. In his words, "If you are outside of that loop, you will not get much information, nor can you influence them."

CASE STUDY #7 - SPORTING GOODS STORE

This business is an established retail store that sells sportswear, shoes, apparel, etc. While not established for the Olympics, the company stocked plenty of Olympics merchandise to sell in front of the store. Revenue increased during the summer games, but not from Olympics merchandise. Surprisingly the increase came from established lines and regular merchandise. The owner feels that sporting good stores should do well in Sidney, if they stick to what they know, and have plans for merchandise and employee control.

The owner felt that the store suffered from an Olympic side issue. It was hard for their employees to get to work. They didn't have a good plan to control the employees. Some days the employees didn't show up because of poor transportation planning. On other days the excitement and competition of the games simply proved irresistible to the young staff of the business, and many were absent without permission—placing strain on the staffing requirements of the business.

GENERAL OBSERVATIONS FROM CASE STUDIES

Explanations

There are two factors that directly contributed to the success and/or failure of the small businesses involved in the 100th Olympiad.

- Business issues related to making money in periods of concentrated demand. Basically, did business owners got greedy and overextend themselves in hopes of "striking it rich?"
- Infrastructure issues relating to government and quasi-government [ACOG] support of small business initiative. How hospitable and organized was the culture of the area for small business success?

Business Issues

These preliminary implications concerning good business practices have been confirmed by our interviews.

- A small business must understand the industry and market that it operates in. Economics matter.

  > *Visitors didn't spend the kind of money people had expected. Restaurants were waiting for droves of diners, but my Olympic guests had no interest in eating out. They were spending so much time getting to venues and sitting through events that by the end of the day, they wanted to relax in front of the television. No one even brought dress-up clothes to wear to a nice restaurant. This was track-shoe city. No guarantees. Unfortunately, many entrepreneurs not only miscalculated spending patterns, but many misjudged the reliability of business associates.* [Geewax, 1996 p 5]

- Some thought must be given to competitive advantage issues. Costs, barriers, and control over prices and distribution do matter very much.
- A management team that has industry and technical experience is critical. Integrity and honesty are also important traits.

Infrastructure Issues

The City of Atlanta and the Atlanta Committee on the Olympic Games do not fair very well in the after action reports of experiences by the small businesses. Georgia is very different from Spain. For example, unlike Barcelona, where a computer rail system weaves throughout the cities and countryside, Atlanta does not have the system of public transportation in place to bring tourists to outlying areas. The issues are complex, but the following single pattern was present in the interviews.

- The City of Atlanta did not provide a friendly environment for small business:

  > *A lot of people who went into this played the game fair, but the game wasn't played fair," Bibbero said. "Once the city accepts those fees and approves that application, they have the responsibility to protect the people they have granted licenses to. They didn't do it. They laid down inept in the street and basically allowed a wholesale massacre."*
  >
  > *Bibbero and many other licensed private vendors complain that the city granted unlimited permits and then failed to enforce its vending ordinance. Consequently, hundreds of unauthorized vendors operated freely in parking lots and on the streets - without licenses and without overhead. They could offer cut-rate prices and skim off much of the business from licensed vendors paying as much as $20,000 each for a kiosk space.* [Anonymous, 1996 p. 7]

- The City of Atlanta failed to adjust traffic to benefit vendors. In fact they closed off some streets in such a way as to divert the flow of tourists away from the prime in-city locations they had leased at premium prices. The City of Atlanta failed to provide promised electrical power to vendors who could not operate without electricity. The City of Atlanta failed to provide carts and tents that vendors contracted for. The City of Atlanta leased the same space in the same location at widely disparate prices.
- Vendors who signed a lease in January claim to have paid $10,000 for the same space leased for $1000 by another vendor at the last minute. The City of Atlanta allowed scores of unlicensed vendors to operate creating an excess of competition. Hundreds of such unlicensed vendors operated freely in parking lots and on the streets without overhead. They could, therefore, offer cut-rate prices and skim off much of the business from licensed vendors who paid as much as $20,000 each for a kiosk space. Police busy with crowd control and security could not be diverted to roust illegal vendors.

Complaints paint a picture of an unprofessional operation by an inexperienced promoter who failed to manage such a giant event. Some of the questions they raise about contractual obligations have taken the city into litigation

The real tragedy is that a county-fair atmosphere with tasteful carts and carefully spaced vending operations could have enhanced Atlanta's image. If professionally done, that look need not have cost any more than the cheap, overcrowded vendor carnival that visitors encountered [Ezzard, 1996].

EVENT-BASED ENTREPRENUERSHIP MATRIX

The Descriptive Model that emerged from the case studies has been summarized in the following matrix. Various motivators, issues and strategies for each case study have been identified. From the matrix it can be seen that "Y" and "N" have been tabulated against each area of interest pertaining to motivators, strategies or tactics, and the last two columns provide their respective percentage frequencies.

MATRIX OF MOTIVATORS, STRATEGIES & TACTICS UTILIZED BY SMES

Objectives / General Motivators	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Y %**	**N %**
Use Olympics as motivator to start business	N	Y	Y	N	Y	N	N	43	57
Utilize surplus funds	N	N	N	Y	N	Y	Y	43	57
Use Olympics returns as source of future financing	N	Y	Y	N	Y	Y	Y	72	28
Test market products to a global community via the Olympics	N	N	Y	N	N	N	N	14	86
Obtain increase market share and brand awareness	N	N	Y	Y	N	Y	Y	57	43
Take advantage of proximity of current business to Olympics venue	N	N	Y	N	N	Y	Y	43	57
Strategies									
Link current range of products to need of prospective	N	N	N	N	N	Y	N	14	86
customers: - participants of Olympics	Y	N	N	N	N	N	N	14	86
- Organizers	Y	N	N	Y	N	N	N	28	72
- vendors – intermediaries - Olympic spectators	N	N	Y	N	Y	Y	Y	57	43
Set up SBU to meet Olympic objectives	N	N	N	Y	N	Y	N	28	72
Utilize major elements of marketing mix	N	N	Y	Y	N	Y	Y	57	43
Obtain Approval ACOG / SOCOG vendor	Y	N	Y	N	N	Y	Y	57	43
Obtain support from government authorities	N	N	N	N	N	N	N	0	100
Locate near the Olympics venue	N	Y	Y	N	Y	N	Y	57	43
Tactics									
Increase levels of stock	Y	N	Y	Y	N	N	N	43	57
Check ordinances for type of machinery that can be used	Y	N	N	N	N	N	N	14	86
Use equipment that also meet local sales needs	Y	N	N	N	N	N	Y	28	72
Re-organize shopfront to denote Olympic theme	N	Y	Y	N	N	Y	Y	57	43
Design Promotional material	N	Y	Y	N	Y	Y	Y	42	28
Hire and train staff to handle extra volume of business	N	N	Y	N	Y	Y	Y	57	43
Arrange for sell and buy back to vendors	Y	N	N	N	N	N	N	14	86

Y= Yes, N= No

Each of the case study participants was required to rate on a Likert score [1 to 7, '1' being not an issue and '7' being a major problem] their concerns about issues that eventuated from the Olympics. These issues were categorized into logistics, finance and planning and infrastructure. The mean scores for each issue is included in the last column. "Purchasing of assets that do not provide value after events" had the highest mean score and this was followed by "No proper regulations on obtaining permits" and "Problems with street closure".

LIKERT SCORES FOR MAJOR ISSUES

Major Issues	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Mean Score**
Logistics								
Problems due to street closure	7	1	7		1	1	2	3
Extend problem from corporate sponsors – closing of streets at last minute notification	6	1	7	2	1	1	2	2.85
Deliveries were difficult – logistics due to street closures	6	1	7	1	1	1	2	2.71
Multiple locations not generally better than one good location	2	1	6	1	2	4	4	2.85
Finance & Planning								
Collection of debts [bounced checks]	1	1	1	7	2	1	1	2
Repossessed equipment	1	1	1	7	2	1	1	2
Inadequate planning and forecasting	1	1	1	5	6	1	1	2.29
Inadequate checking of service providers [registered and not]	1	1	1	4	6	2	4	2.71
Excess spending	1	6	1	4	6	2	1	3
Purchasing assets that do not provide value after such events	1	7	2	2	7	1	6	3.8
Inappropriate credit terms to clients	4	1	1	6	2	1	1	2.3
Loss of revenue because of the oversupply of service provides	4	6	1	2	5	2	4	2.85
Infrastructure								
No proper regulations on obtaining permits	5	3	4	2	2	1	4	3
Possibility of Olympic park bombing	3	2	4	2	1	3	1	2.4
Untrained employees, inadequate employee supervision	4	1	4	2	1	1	6	2.8
Poor inventory control	3	1	3	3	1	1	3	1.9

Major Issues – Likert Scale score [1 to 7] '1' being not an issue, ' 7' being major problem or '0' not applicable

The above mean scores give an indication of the extent of the major in relation to all the SMEs at large. This provides an indication of some issues that need to be addressed by SOCOG.

CONCLUSIONS AND NORMATIVE IMPLICATIONS

Businesses expecting to make a quick fortune out of the Sydney Olympics are likely to be disappointed, as it would not be an easy task. The study found that the businesses most likely to be successful are ones that are already established with surplus funds to deploy into new ventures in which they can afford to take risks [see also Abernathy, 1997]. Businesses interested in participating in the Sydney Olympics should start working closely with SOCOG [ACOG's equivalent in Australia] far in advance to blend their strategic plans with that of the Sydney committee.

Ambush marketing is a phenomenon that is widely utilized in big events and SOCOG should police this closely. There are already signs of this taking place in Australia, for the Olympics of the new millennium [Flint, 1998]. It must also be clearly understood that Australia's population is less than 10% of that of the U.S.A., and visitors from the host country would not be as extensive as that in the Atlanta Games. In view of this fact, Olympic organizers must ensure that Australia is marketed from a macro perspective rather that just focusing in one city [Sydney]. Visitors from across the Northern Hemisphere and other destinations could be better enticed to visit the whole of Australia [Melbourne, Adelaide, Perth, Brisbane, Gold Coast, and the parts of the outback] rather than just spend all their savings in just one city [Sydney]. For this to take place there should be a unified approach from all the different states in Australia to project on image of the "Australian Olympic Games" rather than just "Sydney 2000". This strategic option will open the floodgates for a larger number of visitors for both the Olympics and also provide a boost for Australia's tourism industry.

The Olympics in Atlanta generated not only core construction projects, but also triggered a burst of activity in remodeling, road construction, and other infrastructure work designed to make Atlanta more appealing to the millions of visitors watching the Games [Johnson, 1996]. SOCOG will have to ensure that such infrastructure projects are well managed and small businesses need to bid and procure these projects.

The Olympics in Australia is less than two years away, and hopefully, they will learn and benefit from the painful lessons in Atlanta. The Case study lessons presented in this paper provides specific normative lessons on how businesses can make or lose money during special demand conditions such as during an Olympics period.

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SYLVIE VOGHEL, FCGA[1] - ACCOUNTING, FIGURES, COLUMNS, STRATEGY, AND MUCH MORE

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Abstract

The purpose of this case was to show MBA students that you can major in accounting and still find yourself involved in managerial positions. To that effect, the authors interviewed Sylvie Voghel. By training Ms. Voghel is a Certified General Accountant but thanks to her technical skills and her ability to communicate, she has been able to climb up Hydro-Québec's corporate ladder. The case describes several of Ms. Voghel's important moments in her life. Each period is connected to the next by a common thread, which is her education in accounting. But as years pass by Ms. Voghel has been able to build upon her skills and past experiences are always a source of knowledge for present actions.

> *"Adolescence is not an easy time of life. You are more or less troubled. You're not quite sure who you really are, especially if things are in turmoil around you. CÉGEPs were just coming on the scene. The winds of change were blowing through Québec."*
>
> *"I went into technical studies and continued at the BA level. Since I love being independent and making it on my own, I took my own apartment."*
>
> *"I started technical studies, but I was still up in the air. I was in a muddle: should I go into psychology, law or administration? Then I met Marcel Chaussé who suggested that I become a CGA. He thought it would be a great career for me. He was the first person who seemed to have a clearer notion than I did of where I might be headed."*
>
> *"After that, it was so easy. I said to myself, why not give it a try."*
>
> *"I find that there is a common thread running through all the twists and turns of life: in reality, there are no big gaps."*[2]

INTRODUCTION

As a professional accountant, Sylvie Voghel belongs to the Ordre des comptables généraux licenciés du Québec. As a member of the Ordre's various committees she has twice received the recognition of her peers: the first time, in 1995, as the first woman to serve as chair of CGA du Québec; the second time, in September 1998, when she was appointed CGA-Canada's first vice-president, ensuring her the presidency in 1999, in accordance with a long tradition.

The Order has not, however, been the sole focus of Sylvie Voghel's career. There was also Hydro-Québec, the corporation where she worked during the first twenty years of her professional life.

In that environment, columns, figures, accounting analyses, and plans were her daily tools of trade. But the greater challenge was handling those tools in the mostly masculine universe of Hydro-Québec. How did this young, feminine, energetic, and intelligent woman navigate in that universe? What impact did the people she met there have on her?

This case revisits the high points of Sylvie Voghel's life. During the 70s she got involved in politics and even joined the Liberal Party. How was her personal growth influenced by the political activities that took her all over Canada and allowed her to get a feel for her country. What kind of personal relations grew out of her contacts with Mrs. Taylor, who was in charge of shepherding young Liberals?

Sylvie Voghel has recently made a career change. But it took a period of long, hard reflection before she decided to leave Hydro-Québec in January 1997. It was this time of reflection that led her to Enveloppe Concept, a business that she and her husband, Alexandre Villani, started up in May 1988. What is her role in this business? How does she see her future? These are the questions Sylvie Voghel is now asking herself.

HER FORMATIVE YEARS

The middle child and only girl between two boys, Sylvie Voghel remembers a happy childhood. The age differences separating each child are such that they each felt like the cherished only child.

With Jean-Claude, her older brother, whom she trusts completely, Sylvie Voghel learned to play all sorts of games. He also taught her how to swim, how to ride a bicycle, and how to skate. As a little girl, she spent her summers at the family's country place. Such a rich harvest of memories from those times:

> "There was a large property with a wooded area. I played and dreamed to my heart's content. The games I played were not structured. I let my creativity and imagination take wing. I had no end of freedom as a child."[2]

Jean-Claude went away to college; a younger brother was born; her mother fell ill: these events altered Sylvie Voghel's learning experiences and living environment. She went to spend a year in the home of an aunt who surrounded her with tender, loving care. This was when she learned to read and count. She would later, over many years, spend two weeks of summer vacation with this aunt:

> "I am still very fond of my aunt. She took care of me until I was about 15."[2]

Sylvie Voghel's earliest memories are of a family life which moved easily between town and country:

> "My father liked living in the country, while my mother preferred the city. But my parents were both involved in our upbringing, each with a strong personal vision of education. My mother leaned towards development in an urban environment, because it opened the mind and my father kept saying that growing up in the country was healthier."[2]

At that stage of her life, in the years stretching between early schooling and CÉGEP, Sylvie Voghel attended nine different schools. Remaining flexible and adaptable were part and parcel of her daily life, as was communication:

> "You get over the impression that leaving a place means breaking with something. There isn't a break because ties remain. Communication remains, writing remains. You don't lose friends, you lose walls and classrooms."[2]

Spending her young years in the city as well as in the country would shape Sylvie Voghel's character in countless ways. In the city, she saw her maternal grandmother, Maria Girouard Charron, pursue a career in real estate, buying her last building at the age of 84. It was this grandmother who introduced Sylvie Voghel to real estate transactions. Alexandre Villani remembers Sylvie Voghel's grandmother:

> "I knew her grandmother; I find that Sylvie resembles her. She was the one who taught Sylvie how to manage real estate and whether a buying price was profitable or not. We were both involved in buying the buildings we have owned for 14 years. But Sylvie is the one who manages them."[3]

In the country, Mr. Voghel took things in hand. He was a man of strict and unwavering principles. The rules of life he instilled in his daughter have ensured that she will never undertake anything she can't finish. Alexandre Villani describes his father-in-law in these terms:

> "Her father taught her discipline. He used to tell her to dress well, to stand up straight,

> and to demand respect. He was the one who taught her the importance of being a financially independent woman."[3]

Of all the institutions Sylvie Voghel attended during her adolescence, it was *Collège Saint Maurice* in Saint Hyacinthe that left the biggest mark on her. There she learned about solidarity. There, she took on her first causes and developed her leadership skills. She also started asking a lot of questions:

> "This was not an easy period of my life. I was wondering what would I be" What would I do with my life" Who was I? There were no easy answers."
>
> "My family education was marginal. I bounced from school to school. And then the government decided to set up CÉGEPs. Anyway, at that time, everything was brimming over with excitement in Québec."
>
> "Looking back, I can see that those were very formative years. I established an incredible network of friends. I developed a number of skills. I became more self-confident."[2]

Needing to be independent and self-reliant, she entered a technical program in accounting at *Collège Bois de Boulogne*. She knew that the knowledge and skills acquired in choosing a financial option would give her access to the job market after only three years of study. Marcel Chaussé recalls meeting Sylvie Voghel:

> "She worked hard, but she always had time to help other people. She was a team player and this allowed her to learn more, to go into detail and to fine-tune explanations. She didn't just pal around with the strong students, she was willing to help the weaker ones. She never walked away from a challenge."[4]

When the end of the year approached and business firms came to recruit the best student in each CÉGEP, Sylvie Voghel got offers from the Royal Bank, Esso, Raymond Chabot Martin Paré, and Hydro-Québec. She accepted the Hydro-Québec offer:

> "Hydro-Québec was the firm with the best pay. I needed to be independent. I had my own apartment; I had to work. And there's no denying that Hydro-Québec had a very good reputation: the pride of Québec. It all seemed to make sense to me. I believed I could climb the corporate ladder rather quickly. I passed the interview and joined Hydro-Québec."[2]

Most students do their DEC (Diplôme d'études collégiales) and then find a job"returning to studies only much later. Sylvie Voghel decided to continue her studies in evening courses. Mrs. Taylor speaks of that:

> "This was a deliberate choice, because she could easily have asked her parents to support her further studies. But she did it the hard way: holding down a very demanding job and continuing to study part time. This isn't a woman who looks for the easy way out."[5]

POLITICAL ACTIVITY: OPENING NEW HORIZONS

Marcel Chaussé has this to say about this aspect of Sylvie Voghel's life:

> "Sylvie was busy with her studies. I knew that she was involved in politics, she talked to us about it. Sometimes I saw her come in exhausted and I knew she had just come back from a weekend in the Canadian west. But she still remained rather discreet in personal matters."[4]

Sylvie Voghel was introduced to politics by her father when she was very young. She recounts this period of her life which left such an impression on her:

> "My father was very active in politics and political organization at the county level. Politics was always very important in our home."
>
> "My father was very actively involved, not only in his job but also in his volunteer activities. My mother was also very involved. Volunteer work was always an important part of our life; I think it was one of our cultural traits."
>
> "My father gave back to society by participating in political organization. As just a tot, I was always tagging along. I used to be there when speeches were prepared. I was

> fascinated by what went on, fascinated by the politicians who visited him. I listened to their discussions. On Sunday, I used to see people coming to our house with their requests."
>
> "What I saw seemed so interesting; my father was having such a good time. I heard a lot of laughter. That gave me a taste for politics."[2]

Sylvie Voghel was in her adolescence when she decided to become socially active, entering the political fray in the Plateau Mont Royal district. She wasn't yet 18 when she met Mrs. Taylor for the first time. Mrs. Taylor still remembers that encounter:

> "They had asked me to take charge of youth training: the youth wing of the Party. I was looking for young people who wanted to become active members. This kind of responsibility was a first for me."
>
> "The county where Sylvie was already active, and, by the way, doing terrific work, was not a county I was familiar with. However, I did go the youth meeting there. I was looking for young people who seemed to show some initiative and political concern. I wasn't necessarily looking for graduates in political science, but active members."
>
> "That was when I met Sylvie. I had about 24 young people doing organizational work."
>
> "Logical thinker, focused, a team player, a good listener: meeting Sylvie revealed all this. So she became my unofficial lieutenant in organizing youth activities."
>
> "The bonds we developed were not only socio-political but also those of friendship, because it's very easy to get to know Sylvie. She reaches out to people: smiling, attentive, her eyes a welcome. Sylvie attracts relationships and I think this is something rather rare today. In our society people are fearful, on the defensive; they fear competition, lack candour. With Sylvie this isn't the case."[5]

Sylvie Voghel attended a great number of congresses, and eventually left her county work to join the young Liberals on the provincial scene. She got her first taste of service on a board of administration. And, before long, it was time to move on to the national scene where many challenges awaited her, including the English language, over which she would gain "a very subtle mastery." Mrs. Taylor describes this period of growth:

> "Being from Quebec didn't stop her from making exceptional progress within Party ranks. She took it one step at a time, not rushing into anything. She learned to allow herself periods of reflection and to schedule regular breaks, but always with clear and precise objectives."[5]

On the national scene, Sylvie Voghel got her first lessons in the intrigue of political games. This is how she feels those organizational games influenced her development:

> "There was a "male youth representative" and I was the "female youth representative". As we learned the ropes, I discovered that when you have an idea you want to share, you have to find supporters. You find out who is strong enough to support you. When you enter a room with a sea of faces, you have to become a biographer on the spot and figure out where the alliances are around the table: who is supporting whom, on whom can you count" I learned that at 20 and it has become a net advantage when working on committees or boards."[2]

Mrs. Taylor describes this period of Sylvie Voghel's life:

> "In all her political activities, Sylvie tried to understand what motivated people to cooperate in building and developing things. In my opinion, this is just the opposite of what most people seek and what we sometimes call "the same old routine"-quietness and the status quo. Here was someone willing to take risks."
>
> "Sylvie showed leadership qualities which are quite hard to find nowadays and which were even harder to find when I met her."
>
> "For five or six years, she has not only played a very active and meaningful role but one which has caught the attention of many members of our Party."[5]

From her numerous travels across the country, Sylvie Voghel discovered Canada's great regional diversities and gleaned a store of memories and experiences. The trip West was perhaps the one which marked her the most. During this whole period, she was also developing a wide range of skills.

Alexandre Villani has this to say about Sylvie Voghel's political experiences:

> "Sylvie found her political experiences very satisfying, very enriching. Though we were still students, it was profitable for both of us. We got the chance to broaden our horizons and learn how to organize conventions. We met a lot of people, many perhaps a bit older than we were (because we were quite young) and their greater maturity was a source of much enrichment."
>
> "At first, because we were young, we were somewhat shy and less well-off financially but no other kind of work could have opened up more opportunities. We rubbed shoulders with senators, ministers, parliamentarians, lawyers, all sorts of professionals. We had discussions on all sorts of subjects and this was priceless."
>
> "When you find yourself in a Liberal convention with several hundred people and you're making speeches in English and French... it's a very good school [of quick thinking]."[3]

THE ORDER OF CERTIFIED GENERAL ACCOUNTANTS: TEAMWORK

Going into accounting does not mean a professional life devoted only to audits and bookkeeping, even though acquiring such know-how is the core of this university program.

A prospective accountant's career orientation is also influenced by the fact that there are three distinct ways of becoming a certified accountant: a CGA (Certified General Accountant), a CA (Chartered Accountant), and a CMA (Certified Management Accountant).[6]

As if enlightened by the advice received from Marcel Chaussé, her CÉGEP professor, Sylvie Voghel now had a goal to reach: becoming a CGA. Marcel Chaussé, however, soft-pedals his part in her choice:

> "I didn't feel I was having any particular influence on her."
>
> "Each year I have a personal talk with my students; it's my pet subject. I want them to go the extra mile. I want them to excel."[4]

No sooner had Sylvie Voghel registered for her BA studies, than she also registered as a student of the Ordre. She also attended the coaching courses École des Hautes Études Commerciales de Montréal was offering to students preparing for the Ordre's examinations. In the mid-70s, the content and teaching of these courses were not yet subject to student evaluation. Sylvie Voghel took it upon herself to correct this situation. Armed with the results of her initiative, she made an appointment with the man running the courses, Michel Guindon. He still remembers that meeting:

> "I was very surprised, because no one had ever taken the trouble to do an evaluation. I found the whole affair very interesting and I only mention it because I think it is so typical of her. Wherever she goes, she's always looking to improve things. It was done in a very positive way."[7]

In Sylvie Voghel's mind, nothing could be more normal than wanting to help out:

> "You had the first stirrings of student activism... perhaps it was my political involvement that made me think I had no end of rights. It never occurred to me that I might be stepping on toes, because nothing could have been farther from my mind. I never wanted to step on anybody's toes."[8]

In the 80s, as a CGA member, Sylvie Voghel devoted her time and energy to organizing the Ordre's accreditation ceremonies, and this turned out to be a taxing task. Marcel Chaussé, then chair of the organizing committee, describes the innovations she brought in:

> "That's when we started inviting firms. It was Sylvie's idea; she thought it would give the Ordre a higher profile."
>
> "Wherever she goes, Sylvie leaves her mark. She supplies ideas that slowly make their way."[4]

In 1990, Sylvie Voghel became an active member of the Members in Management Committee. She would also preside that committee for three years. Luc Provencher, another member of that committee, describes its objectives:

> "Sylvie immediately knew what she wanted to do. She knew that we had to reach the mass of these members and do something for them."

> "We were starting off with a vague concept, so it wasn't easy. It took us a year and a half to do the groundwork and publish the first Pro-Gestion."[9]

The texts in the Pro-Gestion collection, all written by experts, provide comprehensive coverage of topics responding to specific needs. Professional accountants are not always trained to handle peripheral matters such as production management, total quality or the evaluation of firms. The collection is also intended for managers of small and mid-sized firms who, for lack of resources and time, often find themselves out of the mainstream. By 1999, the collection contained eighteen titles.

Having launched the Pro-Gestion series, Sylvie Voghel joined, first, the Specialties Committee and then the Education Committee. This is how she describes the work done during her mandate:

> "We were concerned about the requirements set for internships, the role of those supervising internships, and the criteria for accreditation as a CGA. We then put together the *Guide du maître de stage* which integrated the operational needs of small and mid-sized firms."[8]

These early committees on which Sylvie Voghel served were concerned with responding to specific needs in broader and broader fields of activity. Whether working on a committee or on a publication, Sylvie Voghel never does it alone; she surrounds herself with competent and dynamic teams who can deliver top-quality work. For, as she says: "I take pride in what I do, when I am responsible for getting something done, criticism doesn't bother me."

In 1991, Sylvie Voghel was elected to serve a three-year mandate in the offices of the Ordre. The following year, the future president of CGA du Québec, Raynald Vigneault, invited her to seek a seat on the Administrative Committee. She accepted and was elected an administrator, the first step on her way to the presidency. (See appendix 1). This was when she met Pierre Barnès who recalls the circumstances of their encounter:

> "Sylvie came in with a strong background in strategic action and interpersonal relations. When challenges arose, we often called on Sylvie."
>
> "We were both part of the Ordre's new wave and the cause of some alarm. They were right to be alarmed, because we really shook the Administrative Committee up. We brought in notions about the firm that were just a bit more strategic than operational."[10]

Pierre Barnès also admits that, without Sylvie Voghel's presence, his time with the Ordre would have been shorter:

> "I felt I was wasting my time, but the opportunity to work with Sylvie kept me going."
>
> "Sylvie is a woman of strong character who uses her political savvy to ferret out those elements in a file which will lead to concrete results. She was also a big help in keeping order in meetings. Dedicated and strategic in her approach, she is very goal-oriented and a hard worker. She is always ready for a challenge looking for solutions rather than problems and never creating problems. As she points out, a problem is only as important as you want to make it."
>
> "With Sylvie, we tried to inch the Ordre along and to work on more strategic issues such as our relation with CGA-Canada or our role as a provincial organization. Together, we took on the Ordre's strategic planning file and managed to get things moving."[10]

Finally, in 1995, Sylvie Voghel would become the first woman to head CGA du Québec. During her year as president, she worked to raise the Ordre's public profile, attending more than 100 different events"sometimes with her family in tow. She organized a publicity campaign culminating in newspaper ad inserts. The Ordre also sat at different discussion tables across the province. It was during her presidency, as well, that the first of the six volumes in the Financial Performance series was published: a new prospect of development for the Ordre.

Michel Guindon also sat on the Administrative Committee as second vice-president. He often worked with Sylvie Voghel and had many opportunities to observe her in action:

> "What I have found striking about Sylvie are her organizational skills and her lucidity. She is also very intelligent, even brilliant. I don't think she is aware of her [extraordinary] capacities. From the way she talks, she thinks everyone has the same potential."
>
> "I have always liked working with Sylvie just because she straightened things out at the Ordre. Afterwards, things really took off: problems received serious attention and the

> Ordre's profile kept gaining public attention. We wrote credible and critically approved texts."
>
> "Sylvie knows how to go about getting things done and how to get other people to go along with her."[7]

Sylvie Voghel's promotional efforts advanced the Ordre, protected the public and attracted more and more women. Always the team player and consensus maker, she draws attention to the fact that, as president, she never did things solo: "It was all teamwork; this should not be forgotten. I always telephoned key people when I wanted to move things forward."[8]

In 1994, Sylvie Voghel also had responsibilities at the Canadian level, where she sat on different committees over which she did not necessarily preside. Her first experience was on the Administrative Services Committee, a committee which she would, as a matter of fact, scuttle. She recounts the episode:

> "The first year, we worked very hard to produce financial reports more in tune with the needs of the board."
>
> "The next year, I felt the committee had terminated its work. At the first meeting, I moved to have the committee abolished and so it was. It was the first time a major committee had been abolished."
>
> "A trend was set and the number of committees was substantially reduced."[8]

When she was sitting on the CGA-Canada board, Sylvie Voghel also belonged to the Professional Affairs Committee. She noticed that this committee catered mainly to members in private practice, although they represented only about 40 % of all the Association's members. The other members (about 60 %) were involved in management. Without neglecting the members in private practice and their need for information on standards and ethics, she managed to convince committee members to adopt a policy supporting the management people. Certain potentially useful themes from the Québec Pro-Gestion series were selected and translated into English.

In 1995, thanks to her determination and her leadership qualities, Sylvie Voghel managed to standardize education criteria across Canada. At the time, it was out of the question to require a BA in certain provinces, because the members there already enjoyed full privileges without this degree. After Sylvie Voghel was through, the BA was compulsory in all provinces. In 1996, she was appointed to the CGA-Canada executive and she doesn't deny that "the appointment was a gratifying recognition from the other board members."

In 1997, Sylvie Voghel was elected second vice-president of CGA-Canada. She presided over the International Affairs Committee which owed its importance to the role it played in guiding the Association's development abroad. In 1998, out of the Association's 60,000 members, more than 1,700 were working in Asia and more than 1,000 others worked outside of Canada, especially in the Caribbean. And the Association was also branching out into South America.

In early June 1998, the International Affairs Committee met in Québec and this meeting coincided with the CGA du Québec conference. Sylvie Voghel recalls that meeting:

> "The Committee members were absolutely thrilled. I'm sure that meeting is engraved in their memories: the idea that the Francophone province extended them an invitation."[8]

Sylvie Voghel knew that the International Affairs Committee would demand a lot of work. She describes what has been accomplished over recent months:

> "I'm working non-stop. We know where we want to go; we've analysed the markets. There are still a few major pieces of statistical data missing, but the business plan is almost ready. For the first time, we have actually drawn up a business plan, no other committees are doing it."
>
> "We had never taken this approach to international development before; we used to be a bit like the old missionaries, going out to spread the good news. You can open up markets like that, but then you have to structure them. The problem is that board members don't quite get it. My presentation in Yellowknife in July dealt with this problem: "How Do You Open Up a Market" How Do You Develop It?"
>
> "I like things to be well-structured, organized. I love clarity; I'm not fond of the unexpected. This being said, the board members are so happy to have something to

chew on."[8]

Sylvie Voghel believes that the International Affairs Committee is fundamental as a boost to CGA-Canada's reputation and its growth. In addition to working on development, this committee offers distance education in all the Association's courses.

Sylvie Voghel also belongs to a few international organizations such as the *Fédération internationale d'experts-comptables francophones* where she has been a member of the board since September 1998. Because of their interest in small and mid-sized firms, the *Dottori Commercialisti* (Italy's accountants) invites her to their meetings.

Among her many concerns, Sylvie Voghel is questioning the one-year mandate granted to members of the International Affairs Committee. She finds it too short to handle the scope of the work to be done. And each year the permanent staff has to get used to new people. A two-year mandate would seem more suitable and it would avoid excessive turnover, especially since some members spend only one year on the board. She would like to see the current Canadian president and his predecessor continue to devote time to the organization once their mandate is over. In some cases, attendance of the CEO would also seem essential. In July 1998, she made this recommendation.

Finally, in September 1998, Sylvie Voghel was elected first vice-president of CGA-Canada, which ensures her the presidency in 1999. She is chair of the Planning Committee, and devotes a lot of attention to evaluating the firm's administration.

CAREER AT HYDRO-QUÉBEC: WOMAN IN A MAN'S WORLD

Armed with her college diploma, Sylvie Voghel joined Hydro-Québec where she started off as an auditor:

> "For them this was a test run. They had only hired two women; I was one of them to hold this type of position. They wanted to see if a woman had the authority to be an auditor. I was their pilot project."[2]

In her capacity as auditor, Sylvie Voghel travelled throughout Québec taking inventories. This was nothing new to her, as she had crisscrossed Canada to attend political conferences. But it was new to her boss and he somehow felt he had to watch over his young employee.

Sylvie Voghel isn't one to change posts just for the sake of change but rather because each new position represents a promotion and, above all, a learning opportunity. She has this to say about her position as an analyst:

> "I found that position very formative. I was told to document the final version of the chart of accounts. I learned a lot. I knew Hydro's chart of accounts inside out."[2]

Next, she applied for an accounting position and got it. She handled management accounting information and background statistics"preparing documents for the parliamentary commission and checking data supplied by management. After a year in that position, she moved on to the job of organizational accounting advisor.

Sylvie Voghel never remained in the same position for long, despite a Hydro-Québec tradition which tended to keep staff members at the same job for at least a few years:

> "At first, it was mundane work and I had it in my head that things had to keep rolling. I didn't want to waste my time. I had to be in the thick of things, because once I had the hang of something and had brought in the improvements I could, I started to get bored."[2]

One of her superiors dropped a hint that made her realize fewer job shifts might not be bad for her career. After that she tried to mend her restless ways. She settled into organizational accounting where she ended up back in inventories. She had to review the whole inventory system; computerize it; modernize it; and set it up throughout Québec. She again looked around and saw she was the only woman in her work group. But that in no way prevented her from setting up the new inventory system.

Over the years, Hydro-Québec management didn't fail to notice how easily Sylvie Voghel adapted to the different situations she encountered. As she remarks:

> "Management realized how flexible I was, that I was quick to size up a problem, that I was strong willed and very determined in my work. They put me on a floating team.

> Because I wasn't specialized, I could respond quickly and effectively."[2]

In her next position, Sylvie Voghel became division head for management information and statistics. This was the first time a woman had held a position of this level in finance and administration. Surrounded by a good team, Sylvie Voghel took great pleasure in her work there. When she took her maternity leave after the birth of her daughter, she knew that her team was capable of stepping in and taking over.

There weren't many women in executive positions at Hydro-Québec. Yet, there was a desire to promote women. The male-female divide was fading and women were becoming more articulate. But it wasn't always easy to be a woman at Hydro-Québec, as we see from the evaluation Sylvie Voghel received from her boss:

> "Madam, you have been very successful because you have a man's mind in a woman's body." In 1978, that was a compliment and I took it as a compliment. Today, I tell it to people for a good laugh."
>
> "My boss was very satisfied [with me] and wanted to say that it wasn't my fault that I had a woman's body. Since I reasoned like a man, I would have a successful career. He wasn't being negative, he was very serious. He even added that he wasn't worried about me, because he was sure I would go far."[2]

In 1984, when she was about to have her second child, the position as general planning advisor became vacant. Sylvie Voghel was interested in it, because it was a springboard to upper management. But she wondered where her true interests lay. Should she continue in management or become a specialist" Should she pursue a role of leadership based on authority or on specialized know-how" She applied for the position. The competition was stiff: 100 other candidates applied.

Knowing that she would be giving birth towards the end of April, Sylvie Voghel asked the members of the selection committee to see her first because she reasoned that she would be too tired for the interview after the delivery. But the baby surprised both her mother and the members of the selection committee by coming early. Sylvie Voghel passed the interview just the same, noticing that there was not a single woman on the committee: "Only men! I wondered how they would connect with me, this woman who had just had a baby. I started the interview off on a humorous note"not too heavy on content."[2]

Sylvie Voghel got the position as general planning advisor and managed to negotiate resuming work in September after her maternity leave. Though she worked hard in her new position, Sylvie Voghel felt little satisfaction, because she didn't know what was expected of her. She felt she was too far from the front line and did not have sufficient information. Once that had been clarified, things went much more smoothly.

After two years in the position of advisor, Sylvie Voghel figured it was time to move on to something else. While remaining in general planning, she branched off into consumption management where she worked on several big mandates. She was department head for income control and commercial practice. It was a position that she liked because, as she says:

> "I really like management. I like coming to the office and having something to do. I like moving along lots of projects at the same time. When you work as an advisor you can't handle more than one file."
>
> "I loved this period because you had to keep things organized, set things up"across the province. You had to be a communicator. I had lots of contact with different teams."
>
> "There was enormous excitement; I had an extremely competent and motivated team. I worked very hard."[2]

In 1986, at Hydro-Québec, there were very few women heading departments. Sylvie Voghel knows because she was told openly that people would be watching her at income control. Commercial policy was one of the big files that landed on her desk. After having straightened out this file, she had it approved. The next file had to do with performance indicators. The new look of the Hydro bills, with all the added information, was also originally her idea.

Finally, in 1988, she landed her first upper management position as director of management control and cost accounting:

> "It was the main door to general management. This position fit me like a glove, because

> before I had been doing things at different levels."
>
> "I like the kind of accounting that makes you think. But I also knew that I didn't want a job in accounting as such, because, during the employee strike, I had helped the management staff with billing. I knew that I would not like to be in a position where volume is so great."[2]

That same year a quick succession of changes altered Sylvie Voghel's environment. For one, her husband, Alexandre Villani, started up an envelope manufacturing business, Enveloppe Concept.

After two years in management control Sylvie Voghel was named head of research and development in general auditing. There she had to review all the practices: planning, training, evaluation, auditing. It was a long and complicated process.

Sylvie Voghel's last position at Hydro-Québec was as project manager for the quality-and-management-of-change group, where one of her many tasks was setting up the corporation's piloting model. But her enthusiasm was starting to flag. As a great believer in enjoyment and wanting to take pleasure in her work, Sylvie Voghel felt that it was perhaps time to reorient her career.

Alexandre Villani had already been insisting for some time that Sylvie Voghel join him at Enveloppe Concept. For Sylvie Voghel, it was "an unplanned risk" which would mean "putting all her eggs in one basket." But before taking the final decision to leave Hydro-Québec to work at Enveloppe Concept, she would spend two years giving it careful thought and seeking advice from several people. Michel Guindon was sure Sylvie Voghel could reorient her career, though he did express "a few reservations." Luc Provencher was much more categorical:

> "She asked me if I had ever seen a husband and wife run a business together. I told her yes; most of the time it ended in a divorce. It was very difficult because there is no wall between the two, and you see your spouse from another angle. It takes a lot of maturity on both sides to accept that. It's hard to try to compartmentalize your life and not everyone is up to it. I think that Sylvie thought long and hard, wondering if she wasn't putting everything in jeopardy."
>
> "I pointed out to her that moving to a small business would be a change of context from the stimulating multidisciplinary environment she had known. She would be dealing with office and plant workers. She would be giving up a good job, but I also felt that she was no longer happy at Hydro-Québec."[9]
>
> Mrs. Taylor was also consulted:
>
> "We had a long talk about it... Sylvie wasn't in a subordinate position. She was in upper management, but I kept telling her she should at least make it to vice-president. But not the kind traditionally reserved for women."
>
> "She needed to be in a position where she would take action and accept the consequences... not one of those posts they give because there's nobody else to take it and it looks good to have employment equity."
>
> "When you want to make your mark and accomplish something, you have to develop that position and not depend on someone else to hand it to you. If you want to get somewhere, as a man or a woman, very few line posts will open up because that's where the competition is. At the staff level, there is very little competition. At the line level, because power is the very platform you work on, it [power] isn't something you obtain it's something you create. You don't give power to someone; you can give that person a position resembling a position of power but the person must herself develop what it takes to possess and keep the power."[5]
>
> In January 1997, Sylvie Voghel left Hydro-Québec; Mrs. Taylor recalls that moment:
>
> "The day she left, I congratulated her because I knew she would, on her own, get what she was seeking. She was looking for balance in her life, a certain degree of satisfaction in action."[5]

ENVELOPE CONCEPT: A FAMILY AFFAIR, AN AFFAIR OF THE HEART

Sylvie Voghel recalls the circumstances which pushed Alexandre Villani to start up a business:

> "The firm where Alexandre was working had just undergone a merger; Alexandre didn't get the position he wanted and he didn't like the functions he had been assigned. He wasn't happy."[2]

Over the weeks following the merger, Alexandre Villani's dissatisfaction reached such a point that Sylvie Voghel suggested he should start his own business. And that is what he did, with a group of associates. Envelope Concept would start up in May 1988.

The firm made several sorts of specialty envelopes: envelopes with windows, envelopes for coupons; envelopes for film; envelopes for federal, provincial, and municipal governments and for companies. Another of the firm's specialties consisted in value-added contracts for high-volume clients"package deals including envelopes, catalogue, insertion, and mailing.

The first years were anything but easy and bankers anything but patient:

> "I was a sales manager before and quite accustomed to travelling. In a small business there is no money for travel; there were even losses. The bankers threatened to shut the firm down, but Sylvie injected money because she was sure it would succeed. We restructured the company; we revised budgets and costs. We cleaned up our client list, keeping only the most profitable ones. And the firm came back with a growth spurt."[3]

Sylvie Voghel confirms this:

> "I was the mainstay of the firm during the first three years in both psychological and financial support. I had a vision and I had confidence in Alexandre's knowledge and skills."[8]

No longer in charge of the children's schooling, Alexandre Villani could now devote himself to running the firm. After five years, he bought out his associates; he then gradually installed equipment better suited to the production of certain types of envelopes. The couple had a lot to say to each other during those early years of the firm's development; the success of their family and professional life depended on keeping harmony in their daily communication.

After Sylvie Voghel joined the firm in January 1997, the couple's communication gained a new clarity of purpose, reflecting the complementary of their business functions: Sylvie Voghel took charge of administration and finances, Alexandre Villani managed production and sales.

However, moving from Hydro-Québec "a corporation where Sylvie Voghel was assisted and backed up by large teams "to a SME like Envelope Concept where you had to roll up your sleeves and share everything "from personnel to office equipment "it "wasn't easy for either of us." Alexandre Villani comments on the first months the couple spent running the firm together:

> "We shared power and roles, so some line had to be drawn to show who was doing what. And I did occasionally stick my nose in her business... Things are going better now.
>
> Unlike Sylvie, I have always had a small-business mentality because I've always worked in that milieu. You're not talking about the same vision or the same budgets. When you pull off a good deal, nobody knows about it but you. You're always working on your own and there's no glory in it. You don't get outside recognition. In the career arena, you don't get the same pats on the back you would in large firms."[3]

As she had done throughout her career, Sylvie Voghel set herself concrete objectives, because "a challenge needn't be unachievable. That's why I take things one step at a time."

So, she got exposure for Envelope Concept in the written media and on television "a firs"t. She also succeeded in polishing her expertise in the manufacture of envelopes. Alexandre Villani was talking about operating according to ISO standards (appendix 4 briefly describes the origins of this international standards body and its different demands):

> "Each month envelopes by the thousands were scrapped because of manufacturing flaws. The only way to bring this number down was to introduce the ISO. I had started to do this, but with Sylvie it all quickly and gently fell into place. Instead of imposing ISO, she told employees that they were going to help her apply these standards because it was good for Enveloppe Concept. It was good for them."
>
> "And she got everyone to go along with her on ISO. Since being accredited ISO 9002, the number of flaws has dropped. Our ratios have made an incredible increase.

> This year (1998) will be a record for sales and profits.
>
> With Sylvie, we also succeeded in meeting all our delivery deadlines and clientele turnover has decreased."[3]

After ten years of operations, Envelope Concept was flourishing as a firm, selling throughout Canada, and using a network of brokers to export on both coasts of the United States. As sales steadily increased, profits doubled. However, Sylvie Voghel was still having trouble seeing her role in the firm. During a conversation with Pierre Barnès, she became aware of certain aspects:

> "For Sylvie, Envelope Concept was just paper going in one end and envelopes coming out the other. But I think I made her understand that it was more than that."
>
> "I asked her how many employees there were and she said sixty. I pointed out to her that she was responsible for sixty families. Every week, she was generating income for those families. Obviously, she racked up expenses, but she also paid out salaries."
>
> "She hadn't been looking at it from that angle. I went on to point out that running the business at a profit rested on her shoulders."
>
> "When she answered that profits weren't important, [I said] profits are very important because they are generated not only for the success of the firm but also to protect the quality of life of all those who are linked to and dependent on the firm."
>
> "These were not people with her intelligence or her abilities but they were counting on her and she had to find the strength to put bread and butter on each of their tables. Sylvie didn't see herself as a very important input."
>
> "She wanted to have a sense of achievement, but this was one facet she hadn't seen. I think she must have found me very naive when I added that getting out a payroll, paying employees every week, paying suppliers gave a whole lot of people a chance to give their best."[10]
>
> Luc Provencher backs this up:
>
> "Sylvie was in the para-public sector, she had to adapt her concepts to the small private business. In the capitalist milieu, it was the social dimension you had to keep in mind."[9]
>
> Alexandre Villani finds that, in a short time, his wife has already come a long way in the firm:
>
> "Success means getting the employees involved so that they have a sense of loyalty to the firm. I have known some of my employees for 20 years. They come to ask my advice about buying a house or a car, all sorts of things."
>
> "The firm is like a big family; you're dealing with human beings not numbers. My door is always open. Morning and evening, we go around the plant talking to the employees. We're part of the group."
>
> "It took Sylvie less than two years to learn what took me 20 years. She wasn't used to dealing with workers. You have to speak their language and put yourself on their level. They mustn't feel you are their superior. She was quick to learn how to do this."[3]

To celebrate the firm's tenth anniversary, Sylvie Voghel organized a reception for all the employees and their spouses. The reception was held on a boat and fireworks ended an evening of dining and music.

One of Sylvie Voghel's objectives was to carry out a strategic plan to broaden the firm's horizons. More recently, she started working on the firm's public image by preparing a publicity folder. Finally, without being overly concerned about it, Sylvie Voghel has started to think about who will be taking over the firm after them:

> "It's still a bit up in the air. The girls have started working in the firm. But I want to make it enticing so that the firm seems an exciting idea."[8]

Though Alexandre Villani had to put up with some teasing when Sylvie Voghel entered the firm, he's very glad she made that choice:

> "When I'm away, I know that she is there and that she can take the decisions required. Her being there also allows me to travel more often, to drum up sales, and achieve more rapid growth. At first, I worked to build up the business, now I do it for my employees. I love what I do."[3]

As a manufacturer, Alexandre Villani belongs to the Envelope Manufacturing Association, an international association of envelope manufacturers:

"There are three conventions per year where I meet technicians from Germany, France, Spain, Italy. It's very enriching, because you meet people from all over, you make lots of contacts. It broadens your outlook because we don't just talk business but also culture and politics."

"These meetings give me a chance to find out about the world market, new technologies, the evolution of paper prices. This helps me in sales planning."

"Sylvie has gone with me to some of these conventions and she is getting more and more involved. As with accountants, there are all sorts of committees and she told me she would work with the Association once her accounting commitments were over."

"I know she's interested in some of the [Association's] committees."[3]

Alexandre Villani received purchase offers for Enveloppe Concept:

"I was running out of steam and feeling a bit tired. I sort of like to play around with my winning and losing hands. The offers were tempting, Sylvie wouldn't hear of it, she wasn't "handing the firm over on a silver platter." I thank God I didn't sell."

"Today, the firm is running well and it's thanks to her and her tenacity. Sylvie is a good advisor and makes me listen to reason."[3]

WHO IS SYLVIE VOGHEL"

"We've known each other since CÉGEP and Sylvie hasn't changed. She is very determined. When she starts something she sees it through to the end"[whether in] her career, family or profession."

"She has a big heart, perhaps not always expressed. People think she's cold, but when a friend needs her, Sylvie will always find the time to help out."

"She's of a straightforward and strong personality"not easily discouraged and hard to demoralize. She works long days and she has loads of energy."

Alexandre Villani

"I'm going to give you an idea of what a delicate touch this girl has. You know when it rains in Florida, there aren't a lot of museums or cultural places, so where do you go" To the shopping mall. It was raining"lousy weather. We were browsing around the shops: all of a sudden (I'm very fond of cats). I think I was smitten, I really liked it, but for the walls of my apartment in Florida, it seemed a bit expensive. We went on our way."

"Two days later, our departure date was coming up, and she told me she was going to buy a few things. I don't live far from a commercial street. You have to give young people their freedom, I kept watching the clock and I found it was taking her too long... two hours, two hours and fifteen minutes, but the scamp, she had taken the bus... There she came. Tucked under her arm, the cat... all wrapped... all framed... she was so delighted to give it to me. And that cat, I still have it. It graces one of the walls of my guest room. When Sylvie comes, she is in visual contact with that cat."

"So I have this lovely reminder of her in my place. I think the whole thing is charming."

Yolande Taylor

"She was very reserved when it came to herself. When it came to the group or her studies, she was out front. She was involved in so many activities. She was well organized and managed to find the means to keep everything running smoothly."

"You might get the impression she's a cold woman, but talking to her, you find just the opposite. She is very receptive, very warm."

"Her dedication, she's not self-serving in what she does. She's a woman of strategy and consensus. Wherever she goes, she leaves her mark."

"Sylvie is a career woman, but she also has her family and spends a lot of time with them. She is very well organized."

Marcel Chaussé

All who know Sylvie Voghel see her as someone capable of keeping several activities going at once without lowering her standards of perfection. Luc Provencher describes what he observed over the five years he spent working with Sylvie Voghel at the Ordre:

> "When I saw all she was doing"she was very close to her family, her daughters, her husband"her work, the causes she took on, I used to say to myself that she really knew how to keep her priorities straight. That always struck me."[9]
>
> Michel Guindon has also noticed the same thing:
>
> "I had a lot of contact with Sylvie in the office of the Ordre. She always analyzed situations rationally.
>
> "When faced with a problem, she knows how to consult"and with subtlety. She calls people up and gets their opinion almost without their suspecting it. And I'm sure she fits these various opinions together to find the solution. Very often the problem seems insoluble but she always manages to find the solution. She never gives up. When she wants something, she goes for it, without putting anyone else down."[7]
>
> Pierre Barnès stresses the fact that:
>
> "Sylvie learns very fast too; she knows how to profit from past situations. She knows how to learn as situations unfold and how to project solutions based on what she sees."
>
> "She has experience and intelligence; she is surprisingly good at learning as she gets things done. With this judicious personality mix, she's great at taking on very big projects."
>
> "Sylvie is also very cultivated; she has a lot of class. She feels at ease not only with the elite but also in gatherings where people are less cultured. She meets people on their own level."
>
> "She has nobility, in the literary sense of the word, but she can also get very close to people."
>
> "I had the chance to mingle with her on the international scene where she was right in her element. In Paris, she was with French accountants one moment and two minutes later you saw her with Italian accountants."
>
> "There she was, perfectly at ease, sure of herself, without being pedantic. She has a sense of humour, she loves to laugh."[10]

Even when she is very busy, Sylvie Voghel is always available. But its perhaps her communication skills that make her such a good builder. To the question "Who is Sylvie Voghel" she answers:

> "As human beings we are all equal. What makes people different is their ability to connect and communicate in order to reach their goal. This obviously requires a base, a minimal level of academic education. After that, we're all equal."
>
> "I've never used my knowledge of accounting as clout. It's the ability to communicate and to go the distance that has made the difference. This is not inborn; you learn it as time goes by. Changing schools so often , I developed [this ability] from a young age."
>
> "You have to want to reach higher. You have to give yourself completely without counting the cost."
>
> "You have to be passionately committed"convinced that you are going to make things progress and that this will help others."
>
> "You have to push the envelope but take calculated risks. You have to love the spice of life and the unknown and know how to leave room for your dreams."[2]

It was also during her time in politics that Sylvie Voghel learned to communicate and to do public speaking. Mrs. Taylor, the youth trainer, was her guide. Sylvie Voghel admits that:

> "My contact with Yolande Taylor has coloured my behaviour. She was a strong influence and guide. She helped me to be more clear minded, to guard my principles, to know how far to go, to concentrate on good events and not to spread myself thin."
>
> "She also helped a lot in my personal life, especially after the birth of my first daughter."[2]

The guidance and moral support Mrs. Taylor had to offer Sylvie Voghel were dispensed over long weekends. Sometimes Alexandre Villani came along with his wife, sometimes she went alone. Rather like an initiation, those weekends were always opportunities for learning and reflection. It was part of Sylvie Voghel's mental makeup to want to understand how the world works. Mrs. Taylor also finds that:

> "Sylvie is a woman who participates in society and wants to reach certain objectives. What she wants, she gets."
>
> "Sylvie sees things that others don't see. She understands things that others don't understand. She does things that others don't do. I think this defines her personality and this is normally a guarantee of success. She certainly has the magic key to success, because success is what she has achieved, success is what she does achieve; success is what she will achieve. And this is no accident."
>
> "We were saying a while back "Reflective thought is brilliant." In her case this kind of thinking is a daily and not just an occasional thing. She's what we used to call contemplative person. It's not an expression we hear much anymore since classic studies are no longer in vogue. And what has always struck me is that in her thinking"and here I'm not sure how much of this comes from my education in philosophy"she is highly moral"something I can't quite explain, but it's there. It's one of the keys to her success. She's an exceptionally clear and disciplined thinker. She seeks an acceptable level of perfection not necessarily great perfection, but achieving a level of desirable perfection."
>
> "Another key to her success is looking for people who can bring that extra guiding light. She's someone who knows where she's going. She must find it hard to put up with people who wander from pillar to post trying to find their way. She is as solid as an oak; I want for her to be like the legendary oak. It isn't easy to bring down an oak."[5]

Another of Sylvie Voghel's personality traits that Mrs. Taylor finds striking is her relationship with Alexandre Villani:

> "Alex and Sylvie: two very determined students "disciplined- with objectives that grew more focused and continue to do so."
>
> "In '75, there were so many young people going around with their noses in the air, defying traditions, perhaps not as many as today because living together wasn't yet as widespread. [Alex and Sylvie had] what in English you call "commitment". Two young people join hands and say "we're going to be stronger together than separate" and go their way. I think it's to be admired. It's a rare thing to see a young man who has confidence in his mate and a young woman who has confidence in her partner. I think you could call that an exemplary case. It's rare."
>
> "They support each other when the need is there. As a couple, they show exceptional honesty, remarkable transparency, and wonderful dynamics."
>
> "What I'm talking about is [a capacity for] smiling and listening. You won't hear many monologues from Sylvie, she's not one for monologues; she listens and gives her opinion. These are great qualities for building success."[5]

In her brush with industrial psychology, Mrs. Taylor met Professors Black and Mouton from the University of Chicago. They were doing a study of influential American managers to see what kind of profile was displayed by the key players in industrial development:

> "The tests and questionnaires they administered to managers allowed them to determine whether [such persons were] purely and simply concerned with performance or also cared about the quality of human relations. There was the 0 to 9 [type], with 0 for performance and 9 for a strong concern for human relations, or the 9 to 0 [type], all performance and nothing on the human side."
>
> "And the Sylvie that I knew at the time represented for me a professional model of someone who stood at 5. Her concern for performance was equal to her concern for the quality of human relations. And that was something rare."[5]

Harmony, loyalty, perseverance, and determination are important qualities for Sylvie Voghel:

> "I'm very irritated by the manipulation of human beings. Biases often play an important

> role in the relationships between people. There is a lot of verbal fencing, something I find hard because I can't work that way. I love frank speech and I would rather say nothing than to tell a lie."
>
> "I love bringing people around to a common idea and doing things in a gracious manner. That takes time; you have to know where you're going and take the time to think it out."
>
> "You have to be on good terms with yourself. I think that a day when you can't laugh, is a day you should have stayed asleep in your bed. You have to be at ease with yourself and with others. When you are right with yourself, everything meshes and goes better."[8]

A structured person, Sylvie Voghel likes for things to be clear and operate smoothly. Unpredictable events make her uneasy:

> "Not that you have to get lost in the details but you do have to invest the efforts needed to do the job well."
>
> "I like having things under control, perhaps because I have so many irons in the fire. There is the professional Ordre, the firm, the real estate, the girls' education, family life. But now with a bit more maturity, I am learning to slow down."[8]

From their birth, Chloé and Zara have been at the top of the couple's list of priorities: professional career must not stand in the way of either their schooling or overall development.

To achieve that balance, Sylvie Voghel has delegated all the secondary aspects of housekeeping to a competent entourage. She does, however, reserve herself the privilege of dressing the girls and helping them with their homework, while their father shares their sports activities. Family meals in the evening and several weeks of vacation time in summer materialize their desire for quality moments together.

To help the girls maintain close ties with their grandparents and, later, their parents, there are the Sunday meals with the elder Villanis and the country visits with the elder Voghels.

Sylvie Voghel doesn't hide the fact that she "hasn't found it easy raising her children" because she worried about their health or because she was involved in so many things. On her pediatrician's advice, she used her common sense and learned to relax the need to keep things under control. But good communications kept Sylvie Voghel close to her girls and allowed her to help them get over the hurdle of adolescence.

Since a very young age, volunteer work has been an integral part of Sylvie Voghel's life:

> "Volunteer work is very Canadian. I was raised in a family where volunteer work was a big thing. Getting involved was an ordinary part of life."
>
> "Money also has its place, you need it to live. But money by itself is not enough to make great things happen; you have to give your time. Not giving time just to give time"that won't do it. You have to give back what you have received."
>
> "You can take, but you have to know how to give back. You have to know how to share, how to give. You can't be too self-centred. That has been drilled into me since I was very young."
>
> "If everybody got just a little bit involved, according to their own resources and gave back just a little bit of what they have, society would be extraordinary. We would move mountains."[8]

WHAT'S NEXT

In a little less than two years, Sylvie Voghel will have finished her mandate at CGA-Canada. Even if she keeps giving her support and experience to her professional Ordre, her involvement will be different. Alexandre Villani comments:

> "For Sylvie taking a break is hard. She isn't one to take a breather; she would feel out of sorts."
>
> "She likes being in the swing of things; she's very gregarious. She likes being involved, she likes making herself useful."
>
> "She's already starting to plan what she'll do next. I am ready to bet she will go into politics."[3]

Luc Provencher also notes that Sylvie Voghel is giving thought to her future: "She's already thinking about what she will do when she's finished with CGA-Canada and we have talked it over together""[9]

APPENDIX 1
CERTIFIED GENERAL ACCOUNTANT (CGA)
ORDRE DES COMPTABLES GÉNÉRAUX LICENCIÉS DU QUÉBEC

MISSION

Governed by the Professional Code, the first mission of the Ordre des CGA du Québec is to protect the public.

In this regard, and to ensure the competence of its members, the Ordre publishes several works on subjects related to the profession, encourages research and development through substantial investments, and has developed a continuing education program which is accessible to the public, as well as a professional development program.

Several years ago now, the Ordre established a Code of Ethics and regulations which determine the rules of professional conduct of its members.

The Ordre applies a rigorous professional inspection program for the CGAs in private practice, who must join the Ordre's liability insurance program. In addition, committees in charge of discipline, the review of complaints and the indemnity fund are made available by the Ordre to persons who feel that they have been wronged.

Also among its objectives, the Ordre ensures the public awareness and visibility of its members. To achieve this, the Ordre has set up various advertising, promotional and public relations programs.

CGA du Québec Web Site, 1999

SOME GOOD REASONS FOR CHOOSING THE CGA DESIGNATION"

Beyond the traditional boundaries of accounting, the CGA's goal is the organization's financial performance through profitability and financing. Thanks to several areas of expertise the professional with the CGA designation is easily involved in a variety of projects in all sectors of the organization - production, marketing, finance, administration.

These areas of expertise are:

- control systems and procedures;
- financial planning and management;
- budgetary planning and management;
- profitability maximization evaluations.

Employment opportunities are very good because the labour market puts a premium on the CGA designation. Its versatility offers multiple career opportunities. According to the latest 1998 statistics, out of the Québec 6,500 CGA members, nearly 50 % hold positions in the private sector (industrial and service companies). About 30 % of the members work in the public and parapublic sectors, while 20 % are in accounting firms.

Because the education program and the examinations are quite flexible, the candidate can work and study at the same time. The practical work experience, provided it is related to the main fields of the accounting profession, is the choice of the candidate and according to his interests.

Last but not least, the Ordre invests considerable amounts in research and development to the benefit of its members. Its specialized and ongoing training programs reflect changing market needs.

The Ordre des CGA du Québec has 6,500 members and 3,000 registered candidates and students. It is affiliated to CGA-Canada which brings together 60,000 members and students.

CGA du Québec
Information Pamphlet, 1998

STUDY PROGRAM

Students who want to obtain their CGA designation in Quebec or elsewhere in Canada face a long-term commitment. They must meet certain requirements but have a lot of flexibility to organize their courses.

To be admitted to the Ordre des comptables généraux licenciés du Québec education program, students must first register and pay the non-refundable registration fees. Once they have registered, they can either complete a Bachelor's Degree in Business Administration (B.A.) within an Accounting Major program or a Bachelor's Degree in Accounting.

Other graduates may qualify after completing the required Accounting Major courses, or required courses within the Certification program. Such courses will be confirmed by the Ordre when students' registration are accepted.

Registered students may attend the university of their choice, but not transfer to another university without first having their study program reassessed by the Ordre.

A resource person is available in each university to inform students on the CGA education program, examinations, and practical work experience requirements.

Registered students are subject to all rules and administrative provisions enforced by the university they attend. However, despite the guarantee provided by the university, no study program is considered by the Ordre until students are effectively registered in the CGA education program.

At the end of each completed semester, registered students must submit a copy of the relevant university transcripts, to ensure accurate file updating.

COACHING SEMINARS

Various universities offer preparatory courses for CGA examinations. These optional courses are strongly recommended. Relevant information concerning the registration period should be obtained early through university resource persons.

CGA EXAMINATIONS

The three-hour examinations are standardized across Canada, and based on the CGA national education program. Candidates may elect to write from one to four examinations at a time. There are two examination periods a year: in December and in June.

Candidates must successfully write the four CGA examinations: Financial Accounting, Finance, Taxation, Auditing or Management Auditing. The minimum pass mark for each examination is 65 %.

Candidates must have successfully completed the four CGA examinations, and the practical work experience program, within a maximum five-year period.

PRACTICAL WORK EXPERIENCE PROGRAM (PWEP)

Once the CGA study program has been successfully completed, candidates must complete a minimum two-year training period in PWEP-compatible employment.

This practical work experience must be acquired through full-time employment. Trainees must hold positions in accounting and/or accounting-related fields, as described in the Code of Ethics, in either the private, public or para-public sectors. The practical work experience program is supervised by a PWEP counsellor, acting as liaison between the Ordre des CGA and each candidate.

CGA LICENCE

To obtain their CGA licence, candidates registered with the Ordre des CGA du Québec must meet all of the following requirements:

- to hold an Undergraduate Degree (Bachelor's Degree), or a degree or education recognized as equivalent by the Bureau;

- to have successfully passed all CGA examinations;
- to have satisfied all practical work experience training requirements;
- to have completed and submitted the Licence application form;
- to have paid the CGA licence issuance fees.

Anglophone and allophone candidates must conform to the linguistic requirements of the Office de la langue française.

CGA VARIOUS SERVICES

CGA master's graduate program, CGA designation for senior academics, CGA student associations and publications are among the services offered by the Ordre. The Continuing Education program is also an important service to both CGA members and candidates.

CGA master's graduate program. The Ordre des CGA du Québec offers M.B.A., M. Accounting, M. Finance, M. Taxation and M.Sc. in Administration or Administrative Science graduates the possibility to obtain the CGA professional designation:

- by attending four seminars (Accounting, Finance, Taxation, Management Auditing) of varied duration, presented in Montreal - unless participation warrant holding the seminars in other areas - every two weeks on Saturdays, in 6-hour classes;
- by writing all four CGA examinations;
- by completing a two-year practical work experience training.

CGA designation for senior academics. Qualified academics may obtain the CGA designation by writing the Senior Academic Entrance Examinations, for which formal course work is not required. The basic prerequisites are a Doctorate Degree in Accounting or related discipline and a minimum of five-year, full-time faculty experience at a recognized university, in a faculty of business or a related faculty.

CGA Student Associations. Membership takes effect at the time of registration with the Ordre des CGA. Numerous activities are organized, such as information meetings, conferences, debates, company visits, meetings of students and prospective employers and/or CGA members, dynamic job hunting workshops.

Publications. *Bulletin CGA*, a magazine published four time a year by the Ordre des CGA, is mailed to all CGA members, candidates, registered students and subscribers. Depending on the time of the year, various documents, important releases or helpful information are often mailed with it.

CGA Magazine is published each month by CGA-Canada. It features articles of current interest and helps establish contact with CGAs across the country. It is mailed to CGA members, candidates, registered students and subscribers.

Available upon request at the Ordre des CGA office are the 17 titles of the *Pro-Gestion* Series sold at an affordable price. Also on sale are the national education program lesson notes and the examination booklet.

Other publications, such as the *Application Guide of Taxes on Products and Services* or *Réduisez vos impôts*, are revised annually and can be purchased in book stores.

In June 1996, the Ordre launched its *Financial Performance* series consisting of six volumes.

Continuing Education. The Ordre offers a series of professional courses to both CGA members and candidates. These sessions enable participants to improve and update their knowledge on subjects of professional interest.

In September, the Continuing education program booklet is mailed with the *Bulletin CGA*.

THE ORDRE AND ITS ORGANIZATIONAL LEVELS

The territory of the province of Québec is divided into thirteen chapters whose members are responsible for organizing professional and social activities to which candidates and registered students are invited. The thirteen chapters are:

- Abitibi/Témiscamingue
- Bas St-Laurent/Gaspésie/Côte-Nord
- Chaudière/Appalaches
- Estrie
- Lanaudière
- Laurentides
- Laval
- Mauricie/Bois-Francs
- Montérégie
- Montréal
- Outaouais
- Québec
- Saguenay/Lac St-Jean

Members in each chapter form the Members' Assembly. Each chapter is represented by a president.

The next level is the Provincial Bureau. It is formed of members from each chapter elected by universal suffrage. But the president of a chapter does not always represents his chapter to the Provincial Bureau.

A president, a first and second vice-presidents, and a director form the Executive or Administrative Committee. All are elected positions. There is also a secretary. Most of the time some of these persons sits on CGA-Canada.

CGA-CANADA

All provincial associations in Canada and some overseas associations are regrouped to form CGA-Canada. In Canada these associations are:

- CGA-Canada
- CGA-Atlantic Region
- CGA-Alberta
- CGA-British Columbia
- CGA-Prince Edward Îsland
- CGA-Manitoba
- CGA-Nova Scotia
- CGA-Ontario
- CGA-Saskatchewan
- CGA-Newfoundland
- CGA-Northwest Territories
- CGA-Yukon
- Ordre des comptables généraux licenciés du Québec
- CGA overseas associations are:
- CGA-Bahamas
- CGA-Barbados
- CGA-Bermuda
- CGA-Hong-Kong Asia Pacific Region Office

APPENDIX 2
CHARTERED ACCOUNTANT (CA)
ORDRE DES COMPTABLES AGRÉÉS DU QUÉBEC

MISSION

The Ordre des comptables agréés du Québec takes all necessary means so its chartered accountants can use their professional abilities with objectivity and integrity and be leaders in the field in creating, validating and interpreting decision-making information.

CA Web Site, 1999

MEMBERS' VERSATILITY

The Ordre des comptables agréés du Québec has close to 16,000 members. Some 60 % of the Ordre's members work in industry, business, education and the public sector (government, hospitals, etc.). The remaining 40 % practice public accountancy in CA firms of all sizes. The Ordre is an affiliate of the Institut Canadien des Comptables Agréés (ICCA) which has a force of 60,000 members throughout Canada.

OPPORTUNITY IS REALLY SPELLED CA

The profession is a highly diversified one. CAs are active in all sectors and all facets of our society. In turn, this versatility has led to the development of a wide range of specialisations that extend well beyond traditional accounting and auditing activities. CAs are noted for their expertise in decision-making information, i.e. information crucial to informed decision-making. Their areas of expertise are:

- Forensic and investigative accounting;
- Environmental auditing;
- Financial management;
- Assurance;
- Taxation;
- Insolvency;
- Business valuation;
- Financial accounting;
- Management controls;
- Information technologies.

DO YOU HAVE THE CA PROFILE"

The communicator. THE SOCIABLE CA. Sociable CAs work with and for others. They love team work and helping others. You can always count on them.

The decision-maker. THE PRACTICLE CA. Practical CAs are men or women of action. They like concrete results and prefer field work.

The entrepreneur. THE LEADER CA. Leaders CAs love to lead the way, to start new projects. They are ambitious and don't hide it. They know they are good managers and even see themselves as CEOs.

The innovator. THE INTELLECTUAL CA. Intellectual CAs advance knowledge in their field. Often on the look-out for information from any source, they are also good at sharing what they know.

If you have the talent and the inclination to join the profession, a career as a CA can be an unparalleled source of personal development in a professional milieu that will always be able to "count on you"!

EDUCATION

- Obtaining a B. Comm. with a major in accountancy from a university in Québec or in Canada is the first step towards the CA designation. The Bureau de l'Ordre must approve the program.
- As part of the PEP, candidates perform "engagements" during which they play a variety of roles ranging from controller, entrepreneur and tax consultant, to trustee and, of course, auditor. The program focuses on increasing and integrating specific knowledge and applying it in problem-solving situations.
- In conjunction with universities and practitioners, the Ordre has developed this new program to reflect the profession's versatility and the strategic nature of the engagements entrusted to CAs in business and in CA firms.
- The universities offer the PEP at the graduate level. Students are required to complete two semesters representing 30 credits.
- The Uniform Final Exam (UFE) is a national 16-hour examination, divided into four papers of four hours each. The passing grade is 240 out of 400 marks on completion of the four papers.

  The examination's subjects are:
  - Auditing and related services;
  - Financial accounting and financial reporting;
  - Management accounting and financial management;
  - Taxation;
  - Information and control systems.

  The exam is intended to verify that future CAs have assimilated and are able to apply all the knowledge and skills they have acquired, and also possess the talent needed to practice the profession.
- The candidate must register as a *candidate for the practice of the profession* (CPP) and pay the registration fees.
  - Being a CA student has its advantages:
  - A subscription to *CICA Handbook* (plus revisions);
  - The *Public Sector Accounting and Auditing Handbook* (plus revisions);
  - Complementary copies of Bilan and CAmagazine;
  - The *Professional Code*;
  - The *Chartered Accountants Act*;
  - The *Code of Ethics*;
  - Access to La Professionnelle^{MD} card.
- The two-year training period must be completed with one of the 700 training employers approved by the Ordre. It provides future CAs with a chance to apply their theoretical knowledge in real-life situations.
  - The duration of the training period amounts to 2 500 hours:
  - 1 150 hours in accounting and auditing;
  - 100 hours in taxation;
  - 625 hours in auditing;
  - 625 hours in special projects and case study.
- The candidate must conform to the linguistic requirements of the Office de la langue française.

Beyond Numbers ... Figures a CA
Comptables agréés du Québec
Education Guide, 1998

APPENDIX 3
CERTIFIED MANAGEMENT ACCOUNTANT (CMA)
ORDRE DES COMPTABLES EN MANAGEMENT ACCRÉDITÉS DU QUÉBEC

INCOMPARABLE
CMA
THE M MAKES ALL THE DIFFERENCE

HOW THE ORDER DESCRIBES THE ROLE OF THE CMA

As a central member of the management team, the Certified Management Accountant organizes management information, designs systems and implements effective plans of action. CMAs also have special expertise in the responsible management of resources, in accordance with the mission of their organization.

CMA professionals contribute to the success of organizations by playing an active role in the continuous improvement of overall performance.

Ordre des comptables en management accrédités du Québec
Three-Year Strategic Plan, 1998-2001
Excerpt
CMA Web Site, 1999

The modern Certified Management Accountant (CMA) are overturning all accepted ideas about accounting. They are creative and enjoys challenges. They have initiative, ambition, leadership and aptitude for team work.

CMAs are at home on multidisciplinary teams because the education offered as part of the CMA Professional Program has taught them the language of these teams of professionals. CMAs today hold stimulating positions such as financial analyst, management consultant, internal auditor, senior accountant, controller, director, treasurer, chief executive officer, vice-president and even president, in all sectors of activity. Organizations turn to these accounting professionals to participate in such projects as:

" setting up a foreign sales network;
" supporting organizations as part of ISO certification;
" measuring, preparing and carrying out a reengineering project;
" developing an active-based costing model, etc.

As highly sought after managers, CMAs act at a strategic level within the most diverse organizations, from small companies to multinationals. You will find them in public administration and very often in services. Their expertise is even required in less traditional fields such as arts and entertainment, communications and sports.

Some 30,000 people in Canada, including more than 6,000 in Québec, have chosen the CMA designation. CMA-Québec is affiliated to the Society of Management Accountant of Canada.

CMA Web Site, 1999

THE PATHWAY THAT LEADS TO THE CMA PROFESSION

University Education. All Québec universities and the University of Ottawa offer bachelor's programs (Bachelor of Commerce, Major in Accounting or the equivalent) that are recognized by the CMA Order and allow access to the CMA Entrance Examination.

Preparing for the CMA Entrance Examination. Once your university education is completed, the CMA Order strongly recommends that you register for a coaching course to prepare for the CMA Entrance Examination.

Offered by your university, this coaching course will maximize your chances of success in the CMA Entrance Examination. It will enable you to review the major subjects, adequately integrate the various concepts learned in university and develop techniques for passing the Exam effectively.

CMA Entrance Exam. The national CMA Entrance Examination is designed to verify the mastery of material studied at university. It also seeks to ensure that candidates to the profession satisfy quality standards applied throughout Canada.

The Entrance Examination is given on two consecutive days in June each year. The passing grade is 60 %.

A tax deductible fee applies.

CMA Professional Program and the Paid Practical Work Experience. The two-year CMA Professional Program is the last step on the pathway leading to the CMA designation.

The program was actually established in 1990 on the basis of needs expressed by employers in various sectors of the economy in national surveys. Since then, it has been updated regularly to be sure that it always accurately responds to the market's needs. The CMA Professional Program satisfies the requirements of Bill 90 which states that companies must devote 1 % of their payroll to workforce training.

Recent agreements reached with universities clearly position the CMA Professional Program as post-graduate education. A number of universities already offer the content of the program at the master's level. For candidates registered in the CMA Professional Program, this means that they may be granted equivalence of 12 to 15 credits at the master's level if they successfully complete the program. Candidates must obtain a grade of 60 % to pass the Program.

Using non-traditional methods based on the discovery and experimentation, the future CMA professional develops skills and acquires knowledge not included in the university education of the business student. All the subjects dealt with in the CMA Professional Program involve management accounting and management, such as:

- redefinition of the Finance function;
- Economic Value-Added;
- the Balanced Scorecards;
- Intellectual Capital; etc.

Tax deductible fees apply. Approximately 60 % of candidates who make their immediate superior aware of the CMA Professional Program obtain financial support from their employer.

Since the CMA Professional Program must be taken while you acquire practical work experience in a paid two-year traineeship, you can quickly and effectively integrate these leading-edge practices in your workplace. To be recognized as applicable practical work experience, the position must be compatible with the role of the CMA. The Order accepts jobs linked with management accounting, financial accounting, management, finance, management information systems, etc.

SERVICES OFFERED BY THE ORDER

The Order is always available to provide information and guidance through the support of the CMA university representatives as well as the cooperation of the CMA student committees.

The *CMA Rendez-vous Listing* is seen by some 850 employers in all regions of Québec. Through this Listing some candidates eventually find the paid practical work experience they are looking for.

The Listing will be accessible to employers throughout Québec on the Order's Web site.

STUDENT COMMITTEES AND UNIVERSITY REPRESENTATIVES

Student Committees have links with CMA professionals. Candidates can join committees and help organize activities that will enable them to acquire management experience and carry out exciting projects.

Resource people are also available in the universities to answer your questions. University representatives of the Order are able to provide information on academic aspects.

Ordre des comptables en management accrédités du Québec
CMA Education Guide, 1998

APPENDIX 4
ISO, THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ISO 14000 AND ISO 9000

Brian Rothery

Gower Publishing Limited, England, 1995
Excerpts
p. 1 to 28

The International Organization for Standardization (ISO), based in Geneva, is a worldwide federation of national standards bodies from some 90 countries, one from each country. It is a non-governmental organization established in 1947. The main outcome of ISO's work is in international agreements which are published as international standards. Its national members provide their country's share of financial support for the central operations of ISO, through payment of membership dues.

[...] On the world stage, ISO is what in the European theatre is CEN; CEN is the European Committee for Standardization. It represents all of the European national standards bodies and advises the EU on matters of standardization. The national standards bodies of all the European countries are members of both CEN and ISO, while those of more than 70 other countries are also members of ISO. World trade agreements depend upon the harmonized standards produced by these bodies through ISO and the IEC [International Electrotechnical Commission]. Through CEN, and its European members, the "technical barriers to trade" have been removed to create a truly single market in the EU.

ISO 9000

WHAT IS IT?

The ISO 9000 series is first and foremost an integrated, global system for optimizing the quality effectiveness of a company or organization, by creating a framework for continuous improvement.

ISO 9001

This is for companies who need to assure their customers that conformity to specified requirements is met throughout the whole cycle from design to service. It is the most complete and demanding of the series and applies in particular in contract situations [...]

ISO 9002

Where design or specification is established, either internally or from the customer, this model is used to demonstrate capabilities in production and installation. It is less stringent than ISO 9001.

ISO 9003

This model is for the demonstration of capabilities in inspection and test where the product is supplied by a manufacturer for those purposes. It has an even lower level of stringency than ISO 9002 and may be eliminated in the Phase Two revisions.

The new management standards are built upon such elements as *exact specifications*, *precise procedures and instructions*, processes, the *minimization* of waste, *fitness* for purpose, *consistency* of output, honest and *correct* descriptions, performance *evaluation*, the *health and safety* of workers and the *community*, and the protection of the *environment*.

GROWTH OF THE STANDARDS

The British Standards Institute (BSI) virtually invented the standards in the late 1970s, by producing the world's first quality management standard, BS 5750 BS 5750 has since become ISO 9000.

The European Commission started the worldwide spread of ISO 9000 when in 1987 it instructed CEN, the European standards body, to adopt ISO 9000 as the harmonized quality management standard for the coming internal, or 'single' market of the European Union (EU).

As European companies adopted ISO 9000, so did US companies in Europe, and soon it was spreading to sister and parent companies in the US and worldwide. Europe did not rest with harmonized quality management standard but moved quickly to harmonized testing and certification schemes.

WHO NEEDS THE STANDARDS"

Most companies manufacturing products for sale in the developed world face the possibility that now or in the near future they must through independent certification demonstrate that their quality management systems conform to ISO 9000. The companies which will be first expected to conform are in the following categories of manufacturing:

- Suppliers of components or materials to manufacturing industry in general, in particular electronics, electrical, medical, pharmaceutical.
- Food and drink products.
- Building materials and components.
- Print and packaging.
- Transport, in particular, specialized transport.
- Suppliers to the public procurement market.

DEVELOPING THE QUALITY MANUAL

The quality manual has become the centrepiece of the ISO 9000 series. Its contains the company's quality policy and a description of its quality system.

It is the basis for the checklists (criticized by members of ISO/TC committees) which are used both to develop the full system and to demonstrate compliance with the requirements of the standard to a certifying inspector.

[...] the quality manual records and presents the basic documentation used for planning and managing the quality system. It tries to maintain a fine line between urging completeness and not getting into technical detail.

ENDNOTES

1. Certified General Accountant, Ordre des comptables généraux licenciés. Appendix 1 describes the Ordre, the CGA program and requirements to receive the CGA designation. Sylvie Voghel has been named *Fellow* of the Ordre. This top distinction honours members who have made an important contribution to CGA-Canada, to the profession or to the public, or have otherwise particularly distinguished themselves.
   Coming from her peers, this top distinction has a special meaning for Sylvie Voghel.

2. VOGHEL, Sylvie, FCGA, interview conducted on May 13, 1998.

3. VILLANI, Alexandre, President, Enveloppe Concept, interview conducted on August 18, 1998.

4. CHAUSSÉ, Marcel, Lecturer, Accounting, École Polytechnique de Montréal, interview conducted on August 26, 1998.

5. TAYLOR, Yolande, Associate Professor, Département d'administration de la Santé de la Faculté de médecine de l'Université de Montréal, interview conducted on August 20, 1998. Throughout the '70s Ms. Taylor was very active in the Organization in the Liberal Party. She is currently retired.

6. Chartered Accountant, Ordre des comptables agréés; Certified Management Accountant, Ordre des comptables en management accrédités. Appendices 2 and 3 describe both orders, as well as the courses and other requirements for this designation.

7. GUINDON, Michel, Full Professor, Département des sciences comptables, École des Hautes Études Commerciales de Montréal, interview conducted on October 28, 1998.

8. VOGHEL, Sylvie, FCGA, interview conducted on June 15, 1998.

9. PROVENCHER, Luc, Executive Vice President, Corporate Finance and Risk Management, Business Development Bank of Canada, interview conducted on October 28, 1998.

10. BARNÈS, Pierre, FCGA, Executive Assistant to the President, Fédération des caisses populaires Desjardins de Montréal et de l'Ouest-du-Québec, interview conducted on October 28, 1998.

Translated from French by Sybil Murray-Denis. A bilingual CD-ROM version of the case is also available.

WINE AND GRAPE PRODUCTION AT THE UNIVERSITY FARM LEDNICE, CZECH REPUBLIC – CASE STUDY[1]

Jiri Erbes, Zdenek Posvar, and Pavel Zufan
Mendel University of Agriculture and Forestry Brno
BRNO, CZECH REPUBLIC

Abstract

Authors of the paper decided to change their topical focus at the WACRA Conferences, and have prepared a case study on wine market in the Czech Republic. It describes the situation of a particular Czech producer, the agricultural farm in Lednice, which operates under MUAF Brno - the home institution of all the authors. Then it continues with the description of the wine production in the Czech Republic, in Europe, and in the world. This paper includes also a teaching note, and some teaching experience, acquired in the first year of use of this case.

INTRODUCTION

By the end of 1997, Sebastiao Helena Manuel (32), graduate of the Faculty of Economics, MUAF Brno, PhD. student, thought about how to continue and finish his dissertation, aim of which was to prepare suggestions concerning wine production and marketing strategy for the University farm of MUAF in Lednice. Approximately 2/3 of the dissertation have already been written. He studied almost 70 literature titles, prepared the theoretical part of the dissertation, spent a lot of time looking for the information about the situation on the wine market. He has also been looking for the needed information at the university farm, has had a lot of interviews with the management of the farm. Now he should write the most demanding part of the dissertation, the analysis of the information found, identify the opportunities and threats laying in front of the farm on the wine market in the Czech Republic, and recommend the possible reactions of the farm.

WINE AND GRAPE-PRODUCTION AT THE UNIVERSITY FARM LEDNICE

University Farm

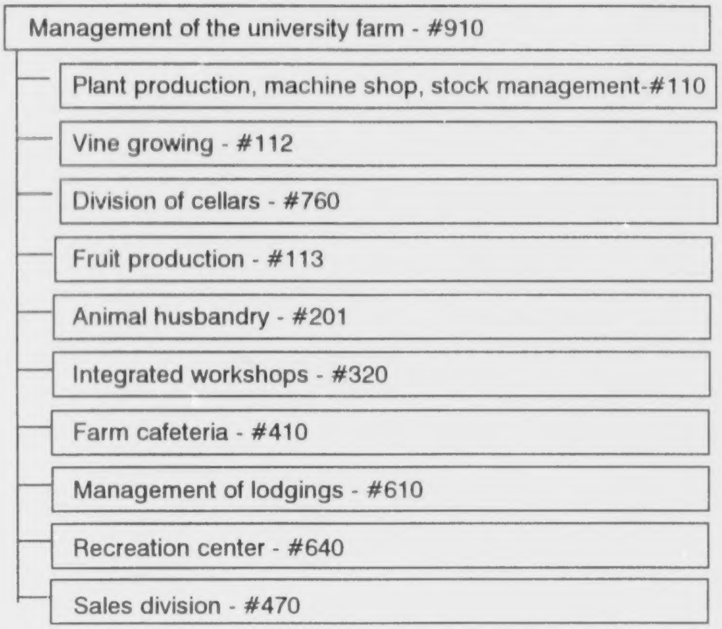
The university farm in Lednice is a farm of the Mendel University of Agriculture and Forestry in Brno. The aim of the farm is to create conditions and means for the development of professional education, training, and research (including the diploma and dissertation thesis) of students and faculty of MUAF, to perform an economical activity, and to provide the market with quality products.

The farm has a two-level, flat organizational structure, where, from the hierarchical point of view, the first organizational level is the management of the farm, and the second level consists of economical divisions. The farm has 10 centers (See Figure 1), of which 5 centers are of production character, and 5 centers are of functional character. The directors of the centers are subordinated to the manager of the farm.

At the end of 1996, the farm employed 186 employees, 134 of which were employed in the economical field. The average monthly salary was CZK 6,740 (the average monthly salary in the Czech republic was about CZK 8,500 – see the endnote #2 for the exchange rates of CZK).

The organizational structure of the farm shows, that in the organization and management of wine production, there is implied the product principle, which lies in dividing the process of growing vine (the division of vine growing - #112) from the process of wine production (the division of cellars - #760).

FIGURE 1 -ORGANIZATIONAL STRUCTURE OF THE UNIVERSITY FARM


Management of the university farm - #910
Plant production, machine shop, stock management-#110
Vine growing - #112
Division of cellars - #760
Fruit production - #113
Animal husbandry - #201
Integrated workshops - #320
Farm cafeteria - #410
Management of lodgings - #610
Recreation center - #640
Sales division - #470

Vine Growing

The division #112 - vine growing is an independent business unit, which operated 59.3 hectares of vineyards, by the end of 1996, of which 7.6 were vineyards younger than 10 years, 53% were vineyards 11 - 20 years old, and 39.4% were vineyards older than 20 years. According to the director of this division, the optimum would be, if the farm would have 45% of vineyards younger than 10 years. The renovation of vineyards, though, is limited by the availability of financial sources.

The average costs of liquidation of 1 hectare of an old vineyard are approximately CZK 100,000 and the costs of establishing 1 hectare of a new vineyard are CZK 500 – 600,000. Under these conditions, the farm is renewing the vineyards only in a very limited range, even if it is able to acquire subsidies from the government. These subsidies are limited by the maximum amount of CZK 250,000 per hectare. It is so even though the farm has 30 hectares immediately usable for vines, and other 30 hectares only with a small adjusting.

The total area of vineyards is divided in 72% of white brands, and 28% of red brands, and all the brands are aimed on wine production. The development of harvest areas of vineyards, and the yields are shown in Table 1.

TABLE 1
AREA OF VINEYARDS AND HARVEST IN 1991 - 1996

Indicator	1991	1992	1993	1994	1995	1996
Area (ha)	63.2	67.8	67.8	62.1	64.4	59.3
Grapes harvested (t)	566	555	298	463	398	320
Yield ($t.ha^{-1}$)	9.0	8.2	4.4	7.5	6.5	5.4

The director of this division is a secondary-school graduate, who manages 14 full-time employees. Even though the director still complains about having a lack of employees, the manager of the farm states, that there will not be any more workers, because the optimum is 5 hectares of vineyards per one full-time employee. Seasonal workers secure the seasonal works. The director of the division argues, though, that he has got only out-dated mechanization for cultivation of vineyards.

The costs, sales, and profits of this division are shown in Table 2.

TABLE 2
COSTS, REVENUES, AND PROFITS OF THE DIVISION #112 IN 1991 - 1996 IN CZK THOUSANDS

Indicator	1991	1992	1993	1994	1995	1996
Costs	9,557	9,375	2,748	3,512	3,005	4,183
Revenues	10,823	9,662	2,252	4,039	2,785	3,664
Profits	+ 1,266	+ 287	- 496	+ 527	- 220	- 519

The Division Of Cellars

The division of cellars (#760) produces and sells wine made of the grapes produced by the division #112.

The original strategy of the farm in vine growing and wine-production was the strategy of sales to the wine-selling firms because the farm have had a cellar with the capacity of 45,000 liters of wine. In the beginning of 80, when the wine-selling firms were buying grapes for CZK 5.00 – 6.00 per kilo and cask wine for CZK 9.00 – 11.00 per liter, management of the farm has prepared a long-term concept of wine production. Its aim was reaching 120 hectares of vineyards, building a new storage capacity and sell cask wine. In 1985, the farm built a tank hall for production and storage of wine with the capacity of 690,000 liters. In 1992, the farm have bought a modern bottling line, price of which was CZK 3.5 mil., and the installation costs were CZK 0.5 mil. The capacity of the line is 1,500 of 0.75 liter bottles per hour. It was decided to prefer and widen the sales of bottled wine.

The amount of wine produced in particular years differs based on the weather conditions influencing the grape production (see Table 3).

TABLE 3
PRODUCTION OF WINE IN THE DIVISION #760 IN 1991 - 1996

Indicator	1991	1992	1993	1994	1995	1996
Grapes harvested (t)	566	555	298	463	398	320
Production of wine (hl)	1,546	2,929	1,915	3,331	1,216	2,246

In 1996 the harvest was 320 tons of grapes of which 4.5 t was sold, and 315.5 t used for production of 2,246 hl of wine. The percentage of wine yield is approximately the same over the years. On the bottling line, the wine is filled into bottles of 0.75 liters, and the bottles are packaged in 12-bottle paper boxes. The average material costs are CZK 9.97 (bottle CZK 3.60; cork CZK 2.60; label CZK 1.18; paper box CZK 0.98; other material CZK 1.61), and the average bottling costs are CZK 2.50. The costs for cask wine in 1991 - 1996 are shown in Table 4. Except for the director (university graduate), the division employs 7 workers.

TABLE 4
COSTS PER 1 LITER OF CASK WINE IN 1991 - 1996

Year	1991	1992	1993	1994	1995	1996
Costs (CZK.l^{-1})	12.26	12.53	14.71	16.47	23.96	24.15

Sales of Wine

The division 760 organizes the sales of wine, and the farm sells only cask and bottled wine, not grapes (with some small exceptions). Sales of wine are a part of division director's responsibility. The division does not have a person, who would be specialized in advertising and sales. The consumers are tending to bottled wine sales of which are gradually increasing; in 1996 about 40% of the total wine sold was bottled wine.

The main customers for the cask wine are wholesalers from the local area. The bottled wine is sold through the wholesalers or sales representatives. Approximately 70,000 liters of bottled wine is annually distributed to the West Bohemian markets. About 3% of the annual sales are sold directly to the customers. For the production and sales of wine in 1991 - 1996 see Table 5.

TABLE 5
PRODUCTION AND CONSUMPTION OF WINE IN 1991 - 1996

Indicator	1991	1992	1993	1994	1995	1996
Production of wine (thous. l)	154.6	292.9	191.5	331.1	121.6	224.6
Sales of wine (thous. l)	188.1	154.8	155.6	224.2	293.5	259.9

Management of the farm looks for the ways to improve the system and level of sales of wine. They are sure the quality of wines is high, and gives a significant competitive advantage to the farm. The management is also convinced, that introducing the brand of "Universitas Vinum" will support the image of wine. A necessity for wine sales is considered to be the use of the marketing mix and looking for the ways to penetrate the foreign markets. Problem of the division #760 remains the insufficient use of the capacity of the bottling line, unfinished air-condition in the tank hall, where changing temperatures influence the quality of wine in stock.

THE WINE MARKET SITUATION

WINE PRODUCTION AND CONSUMPTION IN THE CZECH REPUBLIC

In 1966, the total area of vineyards in the Czech Republic was 11,540 hectares, of which 95.1% was in the Moravian and 4.9% in the Bohemian region.

The average age of vineyards in the Moravian region is 14 years, where only 1.6% of vineyards was younger than 3 years. The share of white brands is 77% of the total, and the rest are red wine. The harvest of grapes differs a lot from year to year depending on the weather. See Tables 6 to 8.

TABLE 6
AREA OF VINEYARDS, HARVEST OF GRAPES, AND PRODUCTION OF WINE IN THE CZECH REPUBLIC IN 1991 - 1996

Indicator	1991	1992	1993	1994	1995	1996
Area of vineyards (ha)	11,223	11,028	9,559	10,331	10,697	11,540

Harvest of grapes (t)	78,711	78,475	51,209	64,522	42,620	69,694
Yield ($t.ha^{-1}$)	7.01	7.12	5.36	6.25	3.99	6.04
Wine production (thous. hl)	687.0	682.8	487.8	525.0	335.2	507.4

Source: Vine, grapevine. Ministry of Agriculture, Czech Republic, Prague 1996

TABLE 7
CONSUMPTION OF ALCOHOLIC BEVERAGES IN THE CZECH REPUBLIC IN 1991 - 1996 IN LITERS PER INHABITANT

Drink	1991	1992	1993	1994	1995	1996
Wine	14.8	15.0	15.3	15.0	15.4	15.6
Beer	146.9	163.3	153.6	156.7	156.9	157.3
Other alcohol (40%)	8.2	8.0	7.8	7.9	7.9	8.0

Source: Statistical yearbook of the CR, 1997, Prague 1997

TABLE 8
WINE PRODUCTION AND CONSUMPTION IN THE CZECH REPUBLIC IN 1993 - 1996 IN THOUSANDS OF HL

Indicator	1993	1994	1995	1996
Production	487.7	525.0	335.2	504.0
Import	241.9	422.0	336.1	661.9
Disposable amount	729.6	947.0	671.3	1,165.9
Consumption	705.2	929.7	660.5	1,157.7
Export	24.4	17.3	10.8	8.2
Total	729.6	947.0	671.3	1,165.9

Source: Vine, grapevine. Ministry of Agriculture, Czech Republic, Prague 1996

For satisfying the demand, the Czech Republic imports mostly table wines - in 1996 68.1% of the total import of wine has had its origin in the EU countries, 17.3% in Slovakia, and 14.6% in other countries. Concerning the export, 54.9% of wine was exported to the EU countries, 29.2% to Slovakia, and 15.9% to other countries. According to the Ministry of Agriculture, the average production costs per 1 liter of quality wine are CZK 37.50, and per 1 liter of table wine CZK 26.99.

The price of wine produced by industrial producers in 1996 ranged from CZK 37.16 to CZK 41.00 per liter of white wine, and from CZK 37.44 to CZK 45.26 per liter of red wine, including the VAT, and the consumer tax. See Tables 9 and 10.

The situation of the wine market in the Czech Republic is also influenced by state regulations, which are for example custom quotes for wine import, issuing the import and export licenses, tax system (VAT of 22%, consumer tax of CZK 2.50 per liter of grape wine and CZK 23.40 per liter of sparkling wine), policy of subsidies for support of grape-production development, etc.

TABLE 9
AVERAGE PRODUCERS PRICE OF GRAPES IN THE CZECH REPUBLIC IN CZK PER TON IN 1991 - 1996

Indicator	1991	1992	1993	1994	1995	1996
Price of grapes	7,638	5,423	6,838	8,523	9,744	11,500

TABLE 10
AVERAGE CONSUMER PRICE OF WINE IN THE CZECH REPUBLIC IN 1991 - 1996 IN CZK PER LITER, FOR SPARKLING WINE IN CZK PER 0.7 L

Wine	1991	1992	1993	1994	1995	1996
White	36.06	35.66	41.53	42.50	45.93	49.11
Red	37.70	36.21	41.83	43.21	47.64	59.27
Sparkling demi sec	63.26	62.41	72.75	76.88	83.49	93.26

Source: Vine, grapevine. Ministry of Agriculture, Czech Republic, Prague 1996

WINE PRODUCTION AND CONSUMPTION IN THE WORLD

The area of vineyards in the world is estimated at around 7.5 mil. hectares, almost 60% of which is located in Europe. Approximately 90% of the total area of vineyards is aimed at growing grapes for wine production and 10% are grapes for direct consumption (See Table 11). In Europe, the share of grapes grown for wine production is higher than in other continents, where more of the grapes are consumed fresh or dried.

The wine consumption in different countries fluctuates a lot, but generally there prevails a decline in annual consumption per inhabitant (See Table 12). It results in a worldwide oversupply of wine.

TABLE 11
WINE PRODUCTION IN THE WORLD IN 1994 - 1996

	1994		1995		1996	
Continent	thous. hl	%	thous. hl	%	thous. hl	%
Africa	998	3.9	1.066	4.2	1.071	4.0
America	4.816	18.8	4.577	18.1	4.507	16.8
Asia	861	3.4	915	3.6	916	3.4
Europe	18.341	72.5	18.147	71.9	19.708	73.4
Oceania	628	2.4	559	2.2	640	2.4
Total	25.644	100.0	25.264	100.0	26.842	100.0

Source: FAO - Production Yearbook, Vol. 50, Rome, 1996

WINE PRODUCTION AND CONSUMPTION IN EUROPE

In Europe, wine is grown approximately on 4.5 mil. hectares, and the annual production oscillates from 18 to 20 mil. hectoliters (See Table 11). Among the states with the highest annual production of wine, there belong Italy (6 mil. hl), France (5.9 mil. hl), and Spain (2.8 mil. hl). Average annual production of wine in Europe exceeds its consumption annually by 20 - 30%. Wine in stock gradually increases, and the growers in a number of countries are not renewing their vineyards, any more. More detailed information about wine production and consumption was possible to acquire for the European Union countries (see Table 13).

In the European Union countries, there is also a gradual decline of the area of vineyards. In 1995, the area of vineyards has been about 3.5 mil. hectares. Also the average consumption of wine per inhabitant has declined from 37.7 liters in 1990 to 35.0 liters in 1995.

CONCLUSION

After the recapitulation of the situation in wine production at the school farm, Sebastiao has formulated its several apparent strengths and weaknesses. Among the strengths are the possibility to increase the area of vineyards, advantageous location of the farm, and quality of wine. As weaknesses he considers the land suitable, but not used for vineyards, insufficient air-condition in the storage facility, and low level of promotion of wine. As he looked at the list of strengths and weaknesses, he realized he has to identify more factors, and to characterize them in more detail so that he can use them for the SWOT analysis.

TABLE 12
DEVELOPMENT OF THE AVERAGE YEAR CONSUMPTION OF WINE IN THE SELECTED COUNTRIES PER INHABITANT

Country	1991	1992	1993	1994	1995
Argentina	54.0	50.2	46.4	42.0	40.0
Brasilia	2.2	2.3	1.6	1.9	1.9
Denmark	23.1	24.9	22.7	23.6	25.0
France	64.7	65.2	63.7	63.1	64.1
Italy	61.8	57.3	57.7	57.8	53.3
Japan	1.1	1.0	0.9	1.2	1.3
Hungary	29.0	30.0	31.7	29.5	27.2
Germany	23.8	24.1	23.5	23.2	22.3
Netherlands	15.5	15.4	12.4	14.4	11.4
Portugal	57.2	55.1	58.7	59.0	59.7
Austria	33.9	33.7	33.2	31.2	31.3
Greece	17.1	15.5	16.6	15.9	15.2
Spain	42.8	41.3	40.4	38.8	37.9
Sweden	12.6	12.8	12.0	12.3	12.0
Switzerland	44.3	43.9	43.4	41.7	42.4
U. S. A.	7.0	7.0	6.6	6.2	5.4
Great Britain	11.3	11.5	11.8	13.3	11.5

Source: FAO, Internet information page, July 1997

TABLE 13
PRODUCTION AND CONSUMPTION OF WINE IN THE EU IN 1992 - 1996 IN THOUSANDS OF HL

Indicator	1991/92	1992/93	1993/94	1994/95	1995/96
Initial stock	12,844	12,034	13,402	14,787	14,543
Production	16,065	18,376	16,400	14,970	14,936
Import	333	230	355	329	580
Amount disposable	29,241	30,640	30,157	30,086	30,059
Export	852	1,213	898	809	1,000
Processed	3,474	3,166	1,800	1,924	2,246
Losses	126	166	122	129	135
Direct consumption	12,755	12,693	12,550	12,681	12,900
End stock	12,034	13,402	14,787	14,543	13,778

Source: Vine, grapevine. Ministry of Agriculture, Czech Republic, Prague 1996

Furthermore he found that there is a mobile bottling line on the Czech market, which might significantly influence the situation at the university farm. Considering the unused capacity of their current bottling line, they have been offering bottling for external bodies. This can be hardened by the new type of bottling line, because all the wine producers will rather let someone come to them with the line, and bottle their wine, than go with their wine to a place, where it is bottled and return back again.

These facts led him to consider also selling the bottling line the farm owns, and buying the mobile one as a possible strategic alternative.

In the external environment he identified some opportunities, and threats which can also be used as input for the SWOT analysis. Among the opportunities he would consider higher prices of bottled wine on the consumer market, possible growth of demand for bottled wine, possibility to use external sources for financing the renovation of vineyards, possibility to increase the wine production at the school farm, and considerable reserves in marketing. Future opportunities could lay in a probable growing demand for wines from South Moravia, development of production technology, and possibility to penetrate the foreign markets. The threats lying in front of the farm are continuous growth of the prices of inputs, import of cheap wine from abroad, entrance of foreign capital and growth of the domestic competition, growth of inflation, and decrease of purchasing ability. In the future it can be expected a faster growth of competition and entrance of foreign capital, increase of the share of quality wines on the Czech market, and change in the structure of consumer demand in the direction of higher demand for quality wines.

TEACHING NOTES AND TEACHING EXPERIENCE

OVERVIEW OF THE CASE

This case study describes the current state and development of the external environment on the wine market in the Czech Republic, and typical problems all the grapes and wine producing companies are facing. Characteristics of the external environment are inflation fluctuating between 8 - 9%, growth of unemployment (in certain region even above 12%), continuous decline of real wages of almost 80% of inhabitants, and decline of GDP. In the EU countries, there is a surplus of grapes and wine production. The Czech Republic is importing grapes and wine for very low prices, which are often below the level of costs of the Czech producers. The businesses are afraid, that this situation will be even worse after the integration of the Czech Republic into the EU. What should a typical wine producer do, when he has an important level of investments into the production facilities from the past, when the competition is growing, the demand for quality wine is growing, and the market demand for wine is stagnating? Are there (and will there appear) any opportunities or are there only threats? How should a business react, and what kind of strategy should it choose for? Or should it perhaps liquidate the wine production? There are a lot of problems and questions; some of them are answered by the case study, some of them have to be answered by the students, and some of them are left open because of the insufficiency of the provided information.

OBJECTIVES OF THE CASE

The case study is aimed for the teaching of General Management, and can be used in teaching Strategic Management. It is worked out so, that students can solve 3 main problem areas:

1. Analyze the external environment on the wine market, estimate its development in the coming 6 years, and define the main opportunities and threats.
2. Analyze the internal environment of the farm, and define its important strengths and weaknesses.
3. Work out a SWOT analysis, and suggest the possible strategies of production and sales of wine.

The case study enables students to apply the theoretical knowledge acquired in other subjects, e.g. Macroeconomics, and Marketing.

SUGGESTED TEACHING APPROACH

This case is suitable for individual and team work, for oral and written presentation. Recommended time for solution of the case study in class is 6 hours, of which 2 hours are for presentation and discussion about the external environment analysis, 2 hours are for presentation and discussion about the internal environment analysis, and 2 hours for presentation and discussion about the SWOT analysis.

The external environment analysis is possible to be done either based only on the information, that is given in the case study, or based also on other information students can be assigned to find out by themselves.

TEACHING EXPERIENCE

This case study has been used in teaching General Management for 240 students of the fifth semester of the Faculty of Economics, specialization of managerial economics, MUAF Brno. The case was submitted to students through the internal information network a month before the first presentation planned. Presentation has been divided into two parts, first part was analysis of the external environment, and the second part the analysis of internal environment and SWOT analysis. In the second part, there was not enough time for more detailed discussion. Students solved the task in teams of three.

Even though students have been told to acquire further information about the external environment, this was done only by some 5% of them. In presentation we used the method of Nominal Group Technique, and students have been actively participating. Nevertheless, they have had some difficulties with defining the opportunities and threats. It often happened that they have been considering strength to be opportunity. These faults showed up also in preparing the SWOT analysis. Students were faced with solving all these problems for the first time during their study, nevertheless, the discussion included a number of remarkable suggestions.

ENDNOTES

1. The case study is written in accordance with reality. The authors would like to thank the staff of the farm for the provided information, some of which was adjusted to comply with the teaching goals.

2. The exchange rates on 4th January 1999, of CZK were CZK 30.166 per 1 USD; CZK 35.226 per 1 EUR; CZK 18.011 per 1 DEM; CZK 26.520 per 100 JPY.

TO GROW OR TO SELL: A CASE ON THE CLASSIC DILEMMA OF FAMILY BUSINESS BASED ON A DIVERSIFICATION STRATEGY PROJECT

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Abstract

This case describes and discusses the current transition from one generation to antoher in a growing southern Spanish middle-size family business. It is based on in-company research and several documents issued by the CEO to the Board of Directors which is composed of five brothers and sisters whose equity holdings are equal. Management professionalization, Strategic Change, Business Diversification, and Family Business Relationships are the main topics in the case. An organizational analysis is derived from a strategy plan, which will be described formerly. This case can be useful as a practical reflection on difficulties faced by the family business in generational transition, even if both internal and environmental conditions are good.

INTRODUCTION

The Pacheco family group of firms is on its way to becoming a formally established Corporate Group. The group will be here named Grupo de Empresas Pacheco (Pacheco Corporate Group) and the parent company will be named Pacheco S.A. (Pacheco Ltd). Even if the names of the companies have been changed here, the case coincides with the strategic planning and Corporate Group formation reports developed from 1995, as well as with the context reality and direct knowledge of the authors.

The first CEO document describes the current situation of Pacheco Corporate Group by analyzing the following matters:

- new business opportunities;
- new challenges to be faced;
- a strategy aimed at consolidating the present position and controlling the growth expectations;
- guarantee of continuity.

Some relevant context items are:

- Andalucia is the largest autonomous comunity in Spain, but it is also one of the most underdeveloped. The lack of infrastructure and business dynamics is a fact, except as concerns tourism, agriculture, winery and other related industries. Therefore, secondary sector entrepreneurship is a traditionally rare feature in the region. Pacheco Corporate Group is an exception.
- EXPO´ 92 of Sevilla was an enormous business boost for the region, especially for civil public construction, the main activity of Pacheco Ltd. Sales revenues for Pacheco Ltd. rose from about

3 million ECUs to 30 million ECUs in the two years before EXPO´ 92, and teh company has mantained or increased those numbers since then. Global construction contracts to be carried out by the company after 1999 total over 120 mullion.

- Andalucia has been one of the main destinations of FEDER and other European Union structural funds in the 90´s. Large Spanish construction firms have worked intensively in the region. These companies are very important customers of Pacheco Ltd., since one of its business areas is the selling and spreading of asphalt. Another main customer is State Public Works Administration itself.

FACTS ABOUT THE COMPANY

Pacheco Ltd. is the parent company and basic pillar of the group and also the source of potential diversification. It was founded in 1929 by Jesús Pacheco, a public works contractor. Today it is a typical family business which is now facing the second to third generation transition. This is traditionally a critical transition in family business, in which a nearly Shakespearian reflection is obliged: To Grow or To Sell, that is the question. In the Spanish context, and for the second alternative, the usual course is to sell to a foreign company. A third alternative, derived from an eventual ´political arena´ situation, is to disappear. In our company, the top management has declared that they will face this moment with "a creative spirit and a clear belief in the need for planning the succession through professionalization and organizational restructuring by searching for the value creation".

Two aspects that can be considered as differenciators are:

- trading negotiation style, open to collaboration with other companies or lobbies;
- personnel loyalty, compromise and identification with the company

The company relies on a corporate image derived from its age and experience, which is a real competitive advantage, especially in the public construction industry, which is based so much on official qualification and trust relationships. Shielded by Pacheco Ltd., other smaller companies have been born and brought up. They have been constituted as growth-and-diversification tools. All of them are formally independent companies and some of them have different executive management. These companies take profit from the good image and positioning of the parent company which, moreover, is a frequent and profitable customer of the services provided by them. The workforce of the family business varies from 500 to 800 people.

STRATEGIC PLAN

The creation of several companies or Strategic Business Units (SBUs) with different positions offers opportunities that have never been exploited. This is one of the central points of the strategy to be implemented. Thus, the first challenge the CEO faces is to establish a Corporate Group with a central management unit that the official document declares to be the Board of Directors, a declaration that must be considered as a warning that the owners (the family) send to the new General Manager (Figure 1 shows the different combinations of property, work, and family membership in this type of company).

Once the founder died, there was no clear, formal company leader. In fact, no organization chart existed. This can be interpreted as an implicit agreement between the two brothers working in the family business, a kind of double-headed top management system, which shows the need to keep control over a growing company and a typical distrust on non-familial high-level managers or even a guarantee that each of the two is hands free in his power domain. In the latest months, several prestigious and well-known Spanish executives have been pushed to leave their General Manager offices in family businesses, only months after they were hired. The usual reasons for this could be that a founder once commanded and controled everything, or that a second generation family sunk in a deep conflict, sometimes an implicit conflict. At any rate this new organization could provide some benefits, including:

- Compatible and consistent SBUs and functional policies framed by a common strategy;
- Better exploitation of corporate synergies;
- Cost reduction through administrative centralization;

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- Economies of scale in centralized functional units, such as the Administration;
- Absortion of market oscillations.

Because of all that it is neccesary to arrange some specific measures are:

- Implementation of Management Information Systems according to the new CEO status;
- Design of organization charts according to the new structure;
- Design of management control systems in line with the current dimension and growth expectations;
- Determination of goals and programs for each of the Corporate Group firms;
- Formalization of decision-making processes;
- Strengthening of the corporate image on the basis of capability, professionalization and differentiation.

GEOGRAPHICAL EXTENSION AND DIVERSIFICATION

The following features of the company are likely to help it face challenges such as geographical extension and other kinds of business diversification:

- Expert knowledge of the sector;
- Capability to establish cooperative associations and other links with and to other companies of the sector, especially Uniones Temporales de Empresas (a kind of joint-venture form in the spanish construction industry);
- Good capitalization level;
- Low financial leverage (this is declared by the company as a strength or even an "independence seal", but it can also be regarded as a less than optimal tactic, since there is a need to grow);
- A large (and loyal) number of customers.

The Corporate Group has three in-region branches, two of them recently established (Córdoba and Málaga) ,and has also purchased two new asphalt plants to reinforce its production capability and market position.

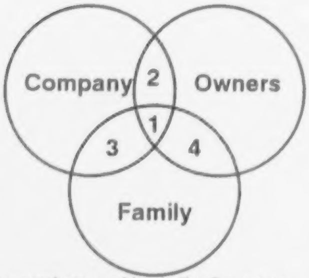
Proyectos Ltd. (the civil construction designing and projecting company of the Corporate Group) has been seriously pushed forward. It was once to be a unit within the production area, since the basic task of the civil engineers and other computer and technical personnel working in the company was to support the projecting, quality control and technical matters of Pacheco Ltd., the parent company. The creation of a postion in the project consultancy sector is the aim of this company.

An environmental engineering company has also been created (IMA S.A.). Pacheco Ltd. had already contracted works related to water purifying and rubbish dumping before the creation of this company, but since this sector is rapidly growing in Andalucía, it needs to be treated as more than a secondary business. The main customers are the same as those of Pacheco Ltd., so this project is a kind of related horizontal diversification.

The Corporate Group is also beginning again the activity in the building sector. Even if this is a recession period in the real estate sector, land lot assets in optimum locations support this project. This activity is expected to be linked to a franchising agreement with a German home computer provider.

Some relevant aspects must be pointed out in order to accomplish a proper strategic and organizational analysis. These context contingencies may directly influence the success of different SBUs of the Corporate Group, and are mainly due to the evolution of the market:

FIGURE 1



1 Owners and family members working in the Company
2 Owners workingin the Company but not members of the famil
3 Family membersnon owners workingin the Company
4 Family members and owners not workingin the Company
(Davis & Tagiuri, 1980)

- Increasing exigencies of public administrations, a basic customer of the parent company and other SBUs;
- An increased narrowing of the results margins due to the economic and political situation (the need of government control on the public deficit, one of the bases for joining the european monetary union), as well as the excess of capability of the construction sector

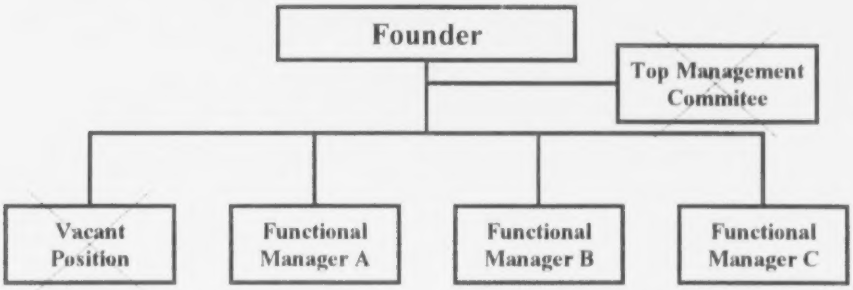
Given these trends, the current CEO bets on:

- The implementation of Quality Assurance Systems that should improve the image of the Corporate Group´s products and/or services in front of customers –especially public administration- so as to improve the operation quality levels;
- The improvement of control through establishing a budgeting system supported by a new cost control system;
- Differentiation through investing in equipment provided with advanced technology.

ORGANIZATIONAL AND POLITICAL ASPECTS

Until the company made these changes in the whole business approach the organization scheme was very simple. There were two main units under the General Manager. On one side, a large number of staff functions were included in the Administration Department. On the other side, every technical and production matter depended on the Production Department. Figure 2 shows the typical family business functional structure, especially during the first and second family generation, and the organization chart of Pacheco Ltd. Both structural designs are based on the principle of functional specialization (marketing, production, financing, R&D...). The founder (or second generation family leader) plays the role of unique integrator, as well as the responsibility of a "main executive leader" and, sometimes, a functional particular responsibility. The second level managers are usually non-familial, mainly as company growth makes it neccesary. Usually, when a successor joins the company there are no vaçant places. It is also common that there is nothing like a top management commitee in this kind of organization. Alternately, the founder invents the position of his own assistant in order to introduce the successor into the company chart; the assistant´s responsibility is to help the founder with anything he may need because of lack of time or of low level of knowledge. The relationship between the assistant and other managers then becomes fuzzy and difficult to keep up. Often nobody, not even the assistant, knows what he has to do or when he has to do it, so he is never really integrated into the organization. A heavier problem is that this situation often damages the founder-father and assitant-son relationship (see Figure 3).

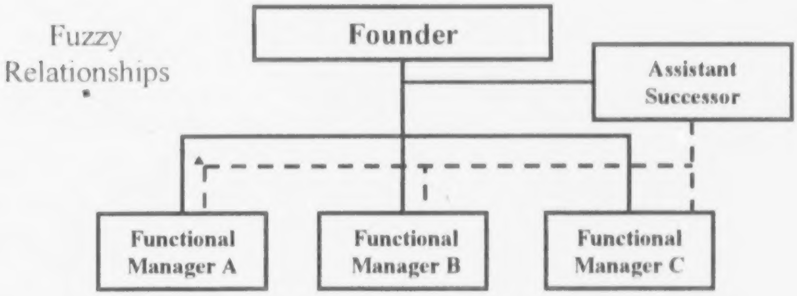
FIGURE 2



If we observe the Production Department structure of Pacheco Ltd., we can see a tri-level department partition: Civil Works (devoted to making roads, bridges, hydraulic works for any public administration); Asphalt Mixings (devoted to the manufacturing and spreading of asphalt for different customers, such as another public works company, individuals or even the Civil Works unit); and Repairs Shops, Machinery Base and Maintenance (a support unit). The functional independence of these three units was not clear, even if they had different nominal managers. They shared physical space, resources and equipment. There were no transfer prices for cross services, from which problems in the cost system and performance evaluation arose in the cost or profit centers. This lack of independence was once considered positive because flexibility was a need in times when the company size advised against establishing differentiated units; this would also imply an impossible investment. As time went by, the huge operational growth intensified the problems of coordination and resource allocation. This was a permanent source of conflict, gaps in assuming responsibilities, inefficiency, and manager dissatisfaction. These problems were linked to the differentiation and growing size of the two basic former production units (Civil Works and Asphalt Mixings), the level of capitalization of the company and the eventual exploitation of economies of scale in whether related or not areas made it neccessary to face the structural change of the company. Figure 4 partially shows how Pacheco Ltd. was structured. Two basic functional areas comprised other units on functional basis as well.

The will to constitute a Corporate Group is a reply to the environmental evolution. The group is formed by a number of Strategic Business Units and a couple of centralized areas, all of them under the responsibility of the CEO, a non-familial professional manager. Figure 5 shows the typical third (or even second) generation family business divisonal structure, and Figure 6 shows the organization chart of Pacheco Corporate Group.

FIGURE 3



Both structural designs are based on the principle of autonomy and market orientation. Likely advantages of this kind of structure are coordination and facilitation of different work flows, as well as the concentration on specific markets. However, an increase in the workforce must be expected, since different functional specialists must be provided to each of the SBUs in order to observe a large part of each work flow and to keep in touch with every step of the other related flows.

FIGURE 4

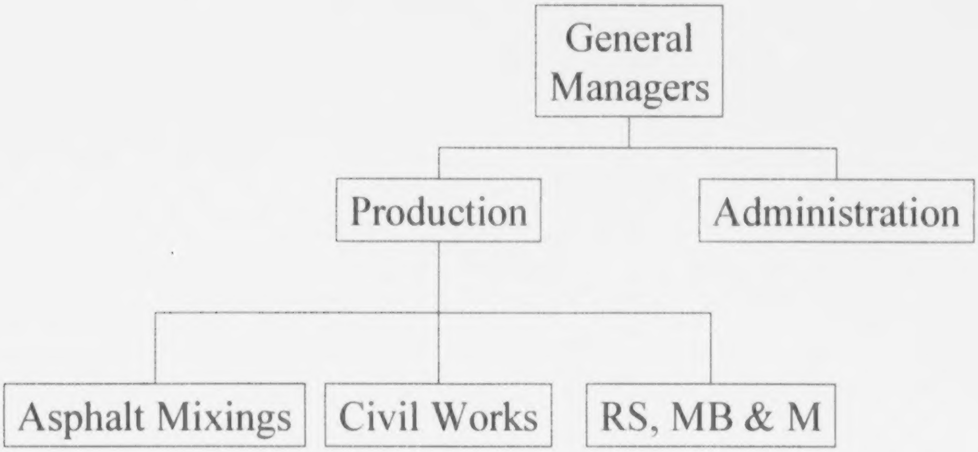

General Managers
Production
Administration
Asphalt Mixings
Civil Works
RS, MB & M

FIGURE 5

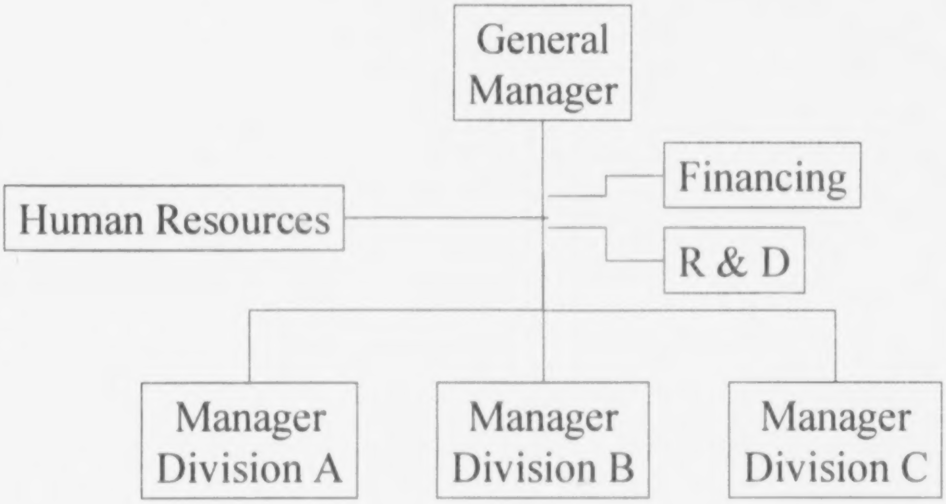
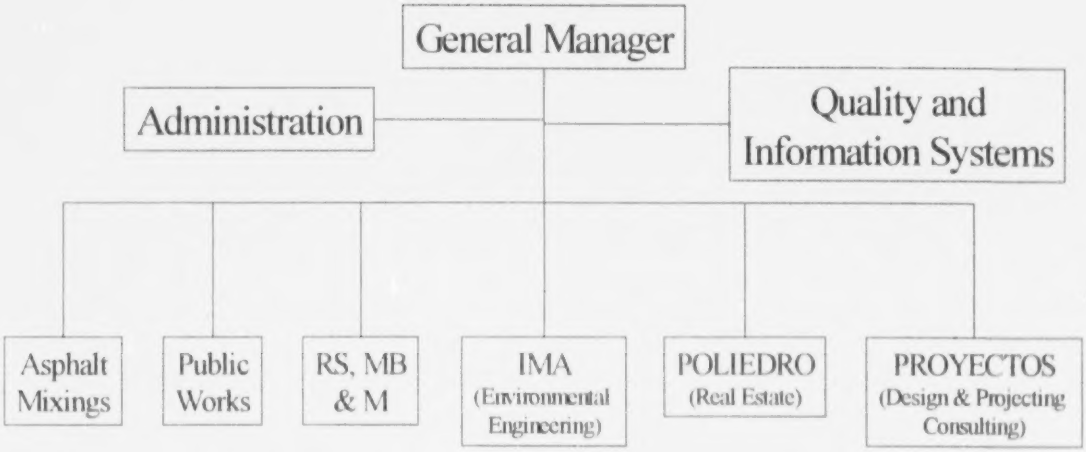

General Manager
Financing
Human Resources
R & D
Manager Division A
Manager Division B
Manager Division C

FIGURE 6


General Manager
Administration
Quality and Information Systems
Asphalt Mixings
Public Works
RS, MB & M
IMA (Environmental Engineering)
POLIEDRO (Real Estate)
PROYECTOS (Design & Projecting Consulting)

LATEST NEWS ABOUT PACHECO CORPORATE GROUP

As noted above, in the latest months several prestigious and well-known Spanish executives have been forced to leave their General Manager offices in family businesses only a few months after they were hired. One of the usual reasons for this could be a transition process to third generation, where difficulties in consensus increase. This is very likely the situation of the Pacheco family, made worse by a ´demographic pressure´: the third generation comprises more than 40 members. A recent visit and an in-company analysis of the diversification project and the organizational changes revealed a dissapointing panorama:

- The General Manager has resigned only a year and a half after being hired, and there is no agreement within the Board of Directors about the need of getting another professional for this position.
- A number of third-generation family members (usually the sons of the two men working in the company´s second transition stage) have joined the company without observing the Family Protocol regulations about the matter. This seems to be the consecuence of a ´quid pro quo´; implicit negotiation among second generation familiy members.
- Unitil now, the Board of Directors has been completely impermeable to younger third generation (or professional) candidates. The attempts to do so by any of the five familiar lines have been rejected or emotionally boycotted. In fact, the Board of Directors has played a simply formal role.
- The real estate project was never seriously accomplished. The original land lots were exploited and sold, but there was not a chance nor a will (endowment of personnel structure or financial resources) to develope a continuous activity.
- IMA, S.A., the environmental consulting company, has reached a very limited trading volume. Moreover, it has for the most part been a sub-contractor of the public works division. Unfortunately, Proyectos, S.A. is in a similar situation. Even if the engineers and technicians were formerly working for the parent company, it seems clear that there has not existed a substantial will to diversify. Thus these two companies cannot be considered real SBUs
- On the contrary, the SBUs directly generated by Pacheco Ltd. perform excelently. The interdependence problems mentioned above were solved and their global trading volume has increased considerably.

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MOVING A DEAL FROM CONCEPT TO REALITY FOR ANCO-EAGLIN: PRE-SHIPMENT EXPORT FINANCING ASSISTANCE BY NORTH CAROLINA SBTDC

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Northern Piedmont Region, SBTDC
WINSTON-SALEM, NORTH CAROLINA, USA
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Benton Miles
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GREENSBORO, NORTH CAROLINA, USA

Abstract

This case deals with the process of borrowing working capital to finance an export order. Readers of the case are apprised of key terms through a glossary. The credit memorandum is a featured exhibit and serves as a source for developing answers to certain of the questions posed. Readers are asked to determine the credit worthiness of the company. A major problem in the case centers on the use of a Letter of Credit to collateralize the loan.

A major concern throughout the case is the high payment risk associated with export transactions. A problem develops in the use of a Letter of Credit to reduce the payment risk and to collateralize the loan. The case demonstrates a pragmatic approach to solving this problem and ensuring the success of the transaction.

OBJECTIVES

1. To be aware of the payment risks typical of an export transaction.
2. To be knowledgeable about some of the strategies employed to lay off (protect against) the risk of an export transaction.
3. To be acquainted with export working capital process terms used in payments export transactions.
4. To explain the role of various institutions involved in promoting U.S. export transactions.

INTRODUCTION

Charles John was appointed to a newly created position, International Business Counselor, for the Winston-Salem, North Carolina, office of the North Carolina Small Business and Technology Development Center (NC SBTDC). The NC SBTDC operates through the University of North Carolina system and has thirteen offices strategically located throughout the state. Each office is affiliated with at least one UNC system institution. Charles' office is located on the Winston-Salem State University campus.

Charles has had a rich and varied career which includes some interesting positions in produce marketing, agri-business management and small business counseling at Greensboro's regional office of SBTDC. Charles earned an MBA degree at The University of North Carolina at Greensboro.

Part of Charles' job is the expectation that he will seek out opportunities to assist small firms in the 21-county area assigned to his office. Clients do seek him out and he will always expand his calendar to add a client that is not aware of the services his office provides but is in need of one of those services. The subject of this case is just such an opportunity waiting to be discovered and it happened in a very normal way – Charles was reading the local newspaper. Always on the alert for an opportunity, Charles thought he saw one.

In March 1997, an item tucked away in the business page of the (Greensboro) News & Record caught Charles' attention. It was headlined *"Greensboro firm Anco-Eaglin sends equipment to Romania."* What also attracted his attention was the news that the company had recently relocated its offices from The Center for Entrepreneurship, a Greensboro-based business incubator, to a much larger manufacturing facility that the company had recently acquired. Charles immediately made contact with Rick Eaglin, Anco-Eaglin's president, to familiarize him with the range of export marketing and export financing programs which the SBTDC was eager to make available to growing companies like Anco-Eaglin.

During the next few months, Rick and Charles maintained contact and Charles came to learn the story behind Anco-Eaglin. The Allbright Nell Company started in 1902 when William Allbright and B. F. Nell began manufacturing equipment for the meat processing industry. Over the last 75 years the company changed its name to ANCO Rendering Equipment and continuously improved and expanded its product line, becoming a worldwide supplier of equipment for slaughterhouses and meat rendering plants. However, in the last three decades the company declined somewhat as it was bought and sold by three successive food equipment companies. Rick Eaglin purchased the ANCO equipment in 1993 and renamed it Anco-Eaglin.

Anco-Eaglin is dedicated to restoring the glory of the ANCO equipment line. Anco-Eaglin's worldwide reputation provides strong support for the achievement of further penetration in third world markets where economic development is fuelling the growth in demand for meat products and other high protein foods. Since acquiring ANCO, a newly designed medium capacity crax-press has been introduced in response to customer needs in the beef industry. Cookers and hydrolyzers for the beef and poultry industries are Anco-Eaglin's other major equipment lines.

The company employs 14 people, including officers. Anco-Eaglin's customers are well-established domestic and foreign meat processors. Orders typically develop from design and layout proposals that are provided in response to prospective customers' general or specific description of need. Anco-Eaglin has the capability to develop original designs, lay out complete processing lines, or modify and upgrade existing designs to customer specifications.

Anco-Eaglin has focused its export efforts on the Latin American market because of its proximity, strong market prospects and favorable trade environment. The company has developed excellent relationships with buying agents. During the last year, Anco-Eaglin has sold more than four million dollars to at least half a dozen customers in Latin America and Europe.

Charles became aware that Anco-Eaglin was attempting to borrow money to finance an export order from remarks made by a banker during a presentation to an export finance training seminar he attended in late 1997. The banker had mentioned that the order was from a buyer in the United Kingdom, but when Charles called Rick, he said that he had a more urgent need for help with a deal in Venezuela.

CASE PRESENTATION

The customer, a Venezuelan poultry integrator, had placed an order for one and a half million dollars worth of assorted cookers, screw presses and odor control equipment. The agreement was that Anco-Eaglin would manufacture the equipment in lots, with partial shipments over a six-month period. Payment terms called for a small down payment, progress payments as equipment lots were shipped, and a final payment when all shipments were completed. The problem for Anco-Eaglin was that the payment arrangements left the company with insufficient funds to finance the working capital required to complete preparation of the order. Also, Anco-Eaglin felt constrained in asking for better payment terms because they were aware that a competitor in The Netherlands was offering attractive credit terms to the buyer. This was the situation when Charles entered the picture.

Charles' initial analysis of the cash flows from the transaction showed that the company would need to borrow as much as one million dollars to finance its working capital needs. Based on his experience in helping small and mid-sized companies borrow money to fund export transactions, Charles anticipated that lenders would, in all likelihood, require a guarantee to protect against the perceived high risks of such a deal. An exporter may apply for an export working capital guarantee of $750,000 or more from the Export-Import (Ex-Im) Bank of the United States. Consideration of this application depends on the risk profile of the country, as indicated in the Country Limitation Schedule (CLS), to which the goods are to be exported. If approved, the amount of the guarantee can be equal to no more than 90% of the related loan that is extended by a commercial bank. Charles was well-positioned to help Anco-Eaglin obtain an Ex-Im Bank guarantee since SBTDC, as the North Carolina City/State Partner, is the authorized representative for the Ex-Im Bank in the state.

Assuming that the country risk is acceptable, financial statement analysis, credit analysis and management analysis are required by the Ex-Im Bank to establish a company's viability, credit worthiness and performance capability respectively. Additionally, Ex-Im Bank requires evidence of the foreign buyer's credit worthiness in order to qualify the transaction for its guarantee. Charles first determined that the Ex-Im Bank was open for business in Venezuela by consulting the CLS, and then commenced preparation of these analyses with Rick's help.

As the paperwork progressed, Rick was emboldened to reopen negotiations on payment terms with the customer. He succeeded in significantly improving the amount and the timing of progress payments, so much so that the working capital deficit was reduced to a half-million dollars. This amount was less than the limit for an Ex-Im Bank guarantee, but also within the authority of the Small Business Administration (SBA). Switching the application from the Ex-Im Bank to the SBA is greatly facilitated by the fact that these federal agencies agree on the use of a common application procedure for export working capital guarantees. The amount of the guarantee, equal to or above $750,000 for the Ex-Im Bank and less than $750,000 for the SBA, is the main basis for choice between the programs.

The application was duly completed and submitted to Ventura Export Bank. See Credit Memorandum presented below.

CREDIT MEMORANDUM

on behalf of
ANCO-EAGLIN, INC.
in support of application for
SBA
Export Working Capital Guarantee
presented to
VENTURA EXPORT BANK
Prepared by Charles John, SBTDC
January 30, 1998

SUMMARY OF REQUEST

Applicant:	Anco-Eaglin, Inc., 120 N. Chimney Rock Rd., Greensboro, NC, 27409. Phone (336) 855-7800, Fax (336) 855-7831.
Commitment:	Final
Loan amount:	$300,000
Term:	Transaction-specific, 6 months

Borrower/Exporter: Same as applicant

Customer: PolloMondo, S.A. de C.V., Av. Sabicas 401 Col. CD, Industrial Celaya, Caracas, Venezuela, 38990.

Lender: Ventura Export Bank, 1234 Market St., Greensboro, NC 27123.
Phone (336) 123-4567.

Use of Proceeds: To finance payments for materials, labor, and other normal business expenses required to manufacture meat processing machinery products, consisting of cookers, screw presses, blow tanks, condensers, and odor control units, as per Purchase Orders #98.234 through #98.246 from Vizcaya US International Corporation, 11457 San Joaquin Boulevard No. 165, Jacksonville, Florida, 12223. Phone (904) 765-4321, Fax (904) 123-4567.

Collateral:

1. Assignment of proceeds of contract-related at sight Confirmed Irrevocable Letter of Credit to be issued by Nederbank, New York Branch, 789 Park Ave., New York, NY 11167-0062. Telex (ITT) 53 5448 NEDER NY in favor of Anco-Eaglin.
2. First priority interest in all contract-related inventories.
3. Second priority interest in all other corporate assets.

Other Security: Personal guarantee of Clayton D. (Rick) Eaglin.

BACKGROUND OF THE BORROWER

ANCO Rendering Equipment started as the Allbright Nell Company in 1902 when William Allbright and B.F. Nell began manufacturing equipment for the meat processing industry. For more than 75 years the company continuously improved and expanded its product line, becoming a worldwide supplier of equipment for slaughterhouses and meat rendering plants. However, in the last three decades the company declined somewhat as it was bought and sold by three successive food equipment companies. Clayton D. Eaglin purchased the ANCO equipment line in 1993 and renamed it Anco-Eaglin.

Anco-Eaglin is dedicated to restoring the glory of the ANCO equipment line. Anco-Eaglin's worldwide reputation provides strong support for the achievement of further penetration in third world markets where economic development is fueling the growth in demand for meat products and other high protein foods. Since acquiring ANCO, a newly designed medium capacity crax-press has been introduced in response to customer needs in the beef industry. Cookers and hydrolyzers for the beef and poultry industries are Anco-Eaglin's other major equipment lines.

The company employees 14 people, including officers. Anco-Eaglin's customers are well-established domestic and foreign meat processors. Orders typically develop from design and layout proposals that are provided in response to prospective customers' general or specific description of need. Anco-Eaglin has the capability to develop original designs, lay out complete processing lines, or modify and upgrade existing designs to customer specifications.

ADDITIONALITY

Anco-Eaglin is not adequately capitalized to finance the rapid sales growth (average of 129% between 1993 and 1996) the company has experienced since coming under new ownership in 1993. Funds are unavailable from current stockholders, and the company's bankers are less than comfortable with the foreign risks associated with the transaction. An Ex-Im Bank guarantee is needed to provide support to the lender who has indicated interest in financing the applicant's remaining working capital requirements in order to execute the transaction.

It is also to be noted that Anco-Eaglin meets the Additionality test by qualifying according to all of the following criteria:

(1) the loan amount is less than $2,000,000,
(2) the exporter qualifies as a small business under SBA guidelines,
(3) the exporter employs fewer than 100 people, and
(4) the exporter's annual revenues do not exceed $10,000,000.

EXPORT ACTIVITY

Anco-Eaglin has focused its export efforts on the Latin American market because of its proximity, strong market prospects, favorable trade environment and excellent relationships with buying agents. Considerable export experience has accumulated through a number of transactions, some of which are listed below:

CUSTOMER #	PRODUCT	COUNTRY	DATE	AMOUNT
Ave 1234	Cookers	Ecuador	Mar 97	$570,712
Agri 1234	Cookers, Crax press, etc.	Romania	Dec 96	$450,800
Indo 1345	Cookers, Crax press	Chile	Jul 96	$636,195
Bach 1456	Cookers	Mexico	Jul 97	$213,284
Prot 1567	Hydrolyzers	England	Jul 97	$206,000
Papri 012	Cookers	Puerto Rico	Jan 98	$710,000
Rolda 167	Cookers, Crax press, etc.	Dominican Rep.	Jan 98	$331,750

Projects for Papri 012 and Rolda 167 are 40% and 22% complete and are on schedule. Anco-Eaglin has typically financed its export orders with down payments and supplier credit. Additionally, production schedules have been managed in order to shorten work-in-process cycles. All other previous projects were finished on time.

EX-IM BANK TRANSACTIONS HISTORY

Anco-Eaglin has never used the facilities of the Export-Import Bank.

EXPORT CONTRACT

The export contract for $1,500,000 is based on a confirmed order issued to Anco-Eaglin by Vizcaya US International Corporation of Jacksonville, Florida, acting as purchasing agents on behalf of

PolloMondo of Venezuela. A Dun & Bradstreet report on PolloMondo showed that PolloMondo had an excellent credit record.

The order consists of 13 Purchase Orders numbered consecutively from 98.234 to 98.246 all dated 1/7/98. Twenty-two pieces of meat processing equipment consisting of cookers, screw presses, blow tanks, condensers and odor control units make up the order. The equipment is to be fabricated and shipped in multiple partial shipment lots between February and June, 1998.

Payment has been arranged through an at sight, confirmed, Irrevocable Letter of Credit to be issued in favor of Anco-Eaglin by Nederbank, New York Branch, 789 Park Ave., New York, NY 11167-0062. Telex (ITT) 53 5448 NEDER NY.

CREDIT HISTORY OF BORROWER

Anco-Eaglin's long term financing relationship consists of a note, recently contracted with Antioch Bank, to refinance family funds used to establish the company. The purchase of company premises, located at 120 N. Chimney Rock Road, Greensboro, NC, was financed jointly by Antioch Bank and the SBA. Debt service associated with these transactions is in accordance with contract terms.

The applicant's relationships with trade creditors are herewith summarized from recent credit reports received.

Supplier:	Sharpe Cutters	Voorhese Electric	Spark's Motors
Contact:	Roger Sharpe	Gaylan Voorhese	David Krabinik
Position:	President	Owner	Plant Manager
Since:	1994	1995	1994
High:	$150,000	$32,000	$35,000
Current:	$0	$23,900	$10,000
Payment:	Net 30 days	Net 30 days	Net 30 days
Timing:	On time	On time	Late
Rating:	Excellent	Very good	Good

The applicant (Anco-Eaglin) advises that there is no pending litigation to which it is a party.

FINANCIAL ANALYSIS

Compiled financial statements were disclosed and verified under the usual confidentiality policy. Preparation of ratios, analyzed hereunder, were in accordance with supervision and verification policies. The norms for the analysis that follows are the appropriate Robert Morris Associates (RMA) ratios for the comparable asset size and sales size categories for Standard Industrial Classification (SIC) 3552 (53-56, 59) - Special Industry Machinery. Selected ratios are compared hereunder with similar ratios calculated from the applicant's 1996 year-end statements.

TABLE 1
ROBERT MORRIS ASSOCIATES

	A-E	Assets 500M-2MM*			Sales 3-6MM		
	1996	**U	M	L	U	M	L
Liquidity							
Current	1.0	2.3	1.6	1.2	2.2	1.7	1.2
Quick	0.3	1.2	0.8	0.6	1.2	0.8	0.6
Rec. Turn.	12.8	13.0	8.7	6.8	13.2	8.7	6.8
Inv. Turn.	5.5	11.0	5.7	3.3	10.8	5.5	2.8
Acc. Pay. Turn.	71.9	23.0	11.4	7.2	23.3	10.3	7.4

	A-E	Assets 500M-2MM*			Sales 3-6MM		
	1996	**U	M	L	U	M	L
Leverage							
Debt to Worth	2.6	0.8	1.5	3.1	0.8	1.6	3.3
Operating Statement							
Total Assets Turn.	1.0	3.1	2.4	1.8	3.1	2.4	1.4

*M = thousands, MM = millions

**U = upper, M = median, and L = lower.

TABLE 2
SALES AND PROFITABILITY OF ANCO-EAGLIN FROM 1994 - 1997

	Compiled 12/31/94	Compiled 12/31/95	Compiled 12/31/96	Provisional 12/31/97
Gross Margin %	26.9	27.1	30.5	32.1
Operating Margin %	1.3	4.9	4.2	2.6
Net Profit margin %	0.8	4.4	4.1	1.4
Total Assets Turnover	0.5	0.7	1.1	0.7

TABLE 3
DEBT STRUCTURE

	Compiled 12/31/94	Compiled 12/31/95	Compiled 12/31/96	Provisional 12/31/97
Debt to Worth	4.5	4.3	2.3	7.7

TABLE 4
LIQUIDITY

	Compiled 12/31/94	Compiled 12/31/95	Compiled 12/31/96	Provisional 12/31/97
Working Capital	($8,827)	$74,785	$94,245	$35,749
Current Ratio	1.0	1.2	1.2	1.0
Quick Ratio	0.2	0.5	0.4	0.4
Receivables Turnover	11.6	8.3	11.8	7.8
Inventory Turnover	5.1	5.9	5.7	2.7
Accounts Payable Turnover	5.2	16.7	121.9	13.6
Sales/Working Capital	-70.3	16.5	23.9	57.5

MANAGEMENT

Rick Eaglin, President
Wanda Eaglin, Treasurer/Secretary
Chris Bergier, Sales/Marketing Manager

PERSONAL FINANCIAL STATEMENTS

Personal financial information for Rick and Wanda Eaglin were disclosed under the usual confidentiality policy. Personal net worth and credit records were judged to be satisfactory.

CONCLUSIONS AND RECOMMENDATIONS

Strengths
1) Strong brand image among domestic and international customers.
2) Secure payment terms for export sales.

Weaknesses
1) Inadequate capitalization for growth requirement and potential.
2) Underutilization of total assets.

RECOMMENDATIONS

The guarantee should be approved.

End of Credit Memorandum

A NEW CHALLENGE IS ENCOUNTERED

Charles was quite pleased with the progress thus far. However, after submitting the application (presented above), Charles and Rick Eaglin encountered a critical, but surmountable, obstacle related to collateral. The collateral that was offered to secure the loan consisted of the following items. First, and most important, was a Confirmed Irrevocable Letter of Credit in favor of Anco-Eaglin assigned to Ventura Bank. A first charge (lien) on contract-related inventory and a second priority interest in all other corporate assets completed the collateral package. It turned out that the Letter of Credit was issued in the name of the Venezuelan customer's American buying agent. Anco-Eaglin was therefore not in a position to assign the Letter of Credit to Ventura Bank nor was the buying agent willing to do so. It would require considerable negotiation among Ventura, the SBA and the buying agent in order to resolve this new problem.

The SBA guidelines for offering its transaction-specific guarantee under the Export Working Capital Program emphasizes the assignment of the proceeds of the related Letter of Credit (L/C) to the lender. If no assignment could be made, then the SBA could refuse to approve the guarantee. If that happened, Ventura may conclude that the payment risk was unacceptably high, and the deal would be off. The challenge for Charles was to get the parties to agree to a waiver of assignment of the L/C under conditions that kept the payment risk acceptable to both Ventura and the SBA. If this plan failed Ventura would "walk away from the deal" and Rick Eaglin would lose the sale.

A relevant concern in this situation would be the creditworthiness of the buying agent, Vizcaya US International Corp. Using some of his contacts at the Ex-Im Bank, Charles learned that the Anco-Eaglin order was a small portion of a very large purchase that Vizcaya US International Corp. was making for PolloMondo, and that umbrella financing for the overall project had been arranged through the Ex-Im Bank. Charles was also told that this was Vizcaya's third transaction with Ex-Im Bank, and that the bank was very satisfied with its business with Vizcaya.

Charles arranged for direct negotiations between Vizcaya and Ventura, anticipating that Vizcaya's promise of prompt remittance to Anco-Eaglin's checking account at Ventura would be acceptable to both Ventura and the SBA as an alternative to assignment of the L/C. Furthermore, if Vizcaya's promise to pay was acceptable to the SBA, the partial shipment and progress payment features of the transaction afforded the possibility to limit exposure if payment difficulties developed. Additionally, the SBA had the comfort of knowing that Rick Eaglin was servicing the mortgage debt on the factory property very satisfactorily. This was the best scenario Charles could conjure up at the time.

GLOSSARY

Additionality - In the language of the Export-Import Bank of the United States, additionality refers to criteria that establish whether an Ex-Im Bank guarantee is necessary to facilitate the financing of an export sale.

At-sight - At-sight refers to payment by sight draft. In the case of an at-sight, confirmed L/C, the confirming bank agrees to pay the exporter upon presentation of documents in good order.

Confirmed - In the case of a confirmed L/C, the bank responsible for payment is typically a major bank in the exporter country, often the exporter's own bank, that agrees to act on behalf of the issuing bank.

Country Limitation Schedule - The Country Limitation Schedule or CLS is a document that summarizes the policies that affect the on-going business relationships between the Export-Import Bank of the United States and individual Countries. (See Worked Example below.)

Country Risk - Country risk refers to a nation's (as opposed to a customer's) creditworthiness. The focus is on the ability and willingness of a foreign government to put at the disposal of local companies, public or private, the foreign exchange necessary to service their foreign currency denominated obligations and liabilities to foreign suppliers.

Crax Press - A crax press is equipment used to mechanically expel fat from meat.

Discretionary Credit Limits - In issuing a Short-Term Export Credit Insurance Policy (See Short-Term Insurance Policies below) to an exporter, the Ex-Im Bank or other insurer sets limits on the maximum amount of short-term credit it is prepared to insure the exporter against non-payment by each foreign customer. Under certain conditions, the Ex-Im Bank may grant the exporter Discretionary Credit Limits, which are pre-approved maximum short-term indebtedness, and allow the exporter to execute export credit insurance policies for transactions with approved foreign buyers within these pre-approved limits.

Hydrolyzer - A hydrolyzer is equipment that breaks up chains of protein molecules by the addition of water. This process improves digestion of animal protein.

Irrevocable - An irrevocable L/C cannot be altered, modified or cancelled without the authorization of all parties named in the L/C, including the buyer, seller, and all banks involved in the transaction.

Letter of Credit - A Letter of Credit or L/C is an assurance of payment given by a bank to the exporter. The assurance remains valid as long as the exporter complies with all conditions stated in the L/C. Compliance with stated conditions is typically achieved by the timely submission of relevant documents to the named bank.

Rendering - Rendering is a process of liquefying fat by breaking down the oil sacs.

Short-Term Insurance Policies - This is a reference to Short-Term Export Credit Insurance Policies which are insurance policies issued by the Ex-Im Bank or other insurer to protect exporters against the risk of non-payment of a short-term (typically maturing in 180 days or less) foreign receivable.

Special Buyer Credit Limits - In the absence of a Discretionary Credit Limit (See Discretionary Credit Limits above) that covers the indebtedness of a foreign buyer, an exporter is obliged to obtain the approval of the Ex-Im Bank for the amount to be insured under the export credit insurance policy.

Unconfirmed - In the case of an unconfirmed L/C, the bank responsible for payment is the bank requested by the importer to issue the L/C.

WORKED EXAMPLE FOR COUNTRY LIMITATION SCHEDULE

The Country Limitation Schedule is continuously updated and is accessible on the Ex-Im Bank's Internet web site at www.exim.gov.

Learn to use the CLS by logging on to the above web site and following the prompts to the Country Limitation Schedule. For illustration, go down the country column to Togo. "X" indicates that support is not available. More specifically, the "Xs" mean that neither public sector risks nor private sector risks, of short, medium or long duration, are acceptable to the Ex-Im Bank. However, this policy is qualified by Note 13 excerpted from the web site.

Note 13 states, *"Although closed for certain routine trade transactions, Ex-Im Bank will consider structured financing arrangements such as Ex-Im Bank's project finance program, asset-based finance leases, and other financing arrangements that offer a reasonable assurance of repayment, including reliable access to adequate foreign exchange."*

Now go down the first column to Venezuela, and note that the absence of "Xs" indicates that Ex-Im Bank finds all categories of risk acceptable, except as qualified by Note 1. Extracts of Note 1 are presented below.

Note 1 states, Discretionary Credit Limits under Short-Term Insurance Policies are withdrawn. Cover not available unless specified in a Special Buyer Credit Limit endorsement.

QUESTIONS

1. Would you recommend that Ventura Export Bank approve a loan for Anco-Eaglin? Give your reasons.
2. Review and note the difference in the entries for Venezuela and Uruguay in the Country Limitation Schedule (see www.exim.gov). Appropriate technical terms are explained in the glossary above. Which country does the CLS rate as the higher risk country? Explain.
3. Review the incomplete statement of strengths and weaknesses included in the Credit Memorandum and list at least one additional strength and at least one additional weakness as a result of your analysis of the information provided on Anco-Eaglin.

TEACHING NOTE

Contents of Teaching Note.

- Case summary
- Suggested use
- Answers to discussion questions
- Epilogue

FORTEX GROUP LTD: THE DEMISE OF A ONCE HANDSOME PRINCE

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Abstract

Fortex Group Ltd, operated in New Zealand between 1985 and 1994 as a processor of meat products and as a marketer of these products both within New Zealand and internationally. In March, 1994 the company was placed in receivership and was subsequently liquidated. Just four years earlier, Fortex won an award as New Zealand company of the year and its chief executive, Graeme Thompson, was honoured for management excellence and for services to the meat industry. This case considers the forces which transformed an organisation regarded as a market leader and as a model which other organisations were encouraged to emulate, into an abject failure.

INTRODUCTION

New Zealand is a small country both in physical terms and population (approximately 3.6 million) located in the South Pacific Ocean about 1200 miles south east of Australia. It consists of two main islands; the North Island which is physically smaller but home for 75% of the population and the South Island; larger but with a minority of the population. Pastoral farming has always been a key aspect of the New Zealand economy and in the lower South Island the production of sheep meat is still a significant economic activity. Traditionally, pastoral farmers produced livestock which was sold "on the hoof" to large meat processing co-operatives. The best product was marketed by a single government agency, the Meat Producers Board, then frozen and shipped to the United Kingdom, generally as whole carcasses. Importers in the United Kingdom undertook further processing. In 1973, the United Kingdom entered the European Economic Community (EEC) and New Zealand could no longer rely on all its export meat being purchased by the British market. New markets proved hard to find for processed frozen carcasses and considerable rationalisation, both in livestock numbers being farmed and in meat processing operations, have taken place in the decade since the United Kingdom's entry to the EEC. This was the environment in which Fortex Group Limited was born in 1985.

INDUSTRY AND COMPANY BACKGROUND

Fortex Group Ltd was the brainchild of Graeme Thompson. Thompson's business career had centred around farming and the marketing of farm produce. As a supplier of livestock to the meat processing industry he had been frustrated by the inefficiencies and inflexibility in the industry for many years. However, meat processing was a capital intensive industry with many barriers to entry by new firms. Apart from the high start up costs, the industry was made up of a few large participants who had strong traditional ties with farmer suppliers. Despite these apparent impediments to entry, Thompson could see that the existing companies in the industry were vulnerable in some respects: trade unions dominated the industry and rigid employment contracts existed which inhibited the best use of labour; the expensive plants used to process meat were idle for long periods and although consumers of meat were becoming more discriminating, the existing meat processors had shown little sensitivity to the changing needs of consumers.

In 1985 Thompson formed Fortex Ltd and entered the meat processing industry. The operations were concentrated in the South Island of New Zealand with a processing facility at Seafield in the Canterbury area of the middle South Island. Thompson's principal competitors were the Alliance Group and the Primary Producers Co-operative Society (PPCS). Fortex and its competitors were co-operatives at this stage with substantial ownership held by the suppliers of livestock. The establishment of Fortex gave Thompson interests in livestock farming, meat processing and in domestic marketing of the product. Thus, the industry that Fortex entered in 1985 was characterised by:

- central government control over the marketing and selling of meat overseas;
- rigid labour relations between employers and employees which resulted in processing plants operating for only a fraction of their potential operating time;
- shareholding dominated by suppliers of stock whose priority was in obtaining high prices for livestock rather than the profitability of the processing company;
- low value added processing of animal carcasses. Typically whole carcasses were exported in frozen form and further processing was carried out in the importing country;
- a production driven mentality rather than a mindset sensitive to market conditions.

Until the United Kingdom's entry into the European Economic Community in 1973 that country had represented a captive market which consumed all the meat product New Zealand could produce. This single market which accepted unsophisticated product in the form of frozen meat carcasses had a significant influence on the way the industry had developed in New Zealand. However, the market environment had changed and Thompson saw some opportunities for a new player in the industry who was prepared to be innovative and do things differently. Although structural inefficiencies existed in the industry, Fortex was not constrained by some of these structural factors. Further, its entry to the industry coincided with the introduction of government policies designed to open up the New Zealand economy.

Two significant factors which assisted Fortex initially were, its ability to negotiate contracts with its labour force which were not constrained by a history of strong trade union intervention and secondly, the relinquishment of central control of meat marketing and selling by the New Zealand government in 1986. This latter development allowed private firms to make their own arrangements regarding overseas marketing. Fortex was experienced in domestic marketing of specialised meat products and was well placed to take advantage of this deregulation. Thus, Fortex entered an industry dominated by two large inefficient participants and made an impact almost immediately through innovative production and marketing practices.

THE FORTEX STRATEGY

The marketing strategy adopted by Thompson and his team had the following key elements:

- Targeting of speciality markets in Europe and the United States.
- Direct selling to the local restaurant trade in New Zealand.
- A high standard of service to overseas customers facilitated by marketing offices in Belgium, the United Kingdom, Hong Kong and the USA.
- Products with a high level of further processing and thus high value added content.

The production approach adopted incorporated:

- the flexible use of labour with no penal wage rates paid for overtime; this allowed 22 hour plant operation six days a week;
- a focus on the requirements of the market rather than being production led; this required a capability to supply a range of specialty products in chilled rather than frozen form;
- the development of state of the art plant to meet customer needs both in terms of volumes and differentiated product;
- the establishment of smaller plants with just one processing chain rather than the traditional multiple chains found in older plants in New Zealand. This was designed to ensure that available plant capacity was used.

It was anticipated that this strategy with an emphasis on market requirements would not only allow the company to develop new markets but would also win customers from Fortex's competitors. Further, the demand for high quality stock created by Fortex was expected to influence farmers to change their production patterns in an effort to earn the higher prices on offer. It was hoped that some farmer suppliers who had previously sent their stock to Alliance or PPCS would become suppliers to Fortex.

This strategy was different from that of Alliance and PPCS in that they generally retained stock in the form of whole carcasses and stored them in frozen form until required by the market. This often resulted in high stock levels having to be maintained. Fortex's strategy was also consistent with the free market policies of the New Zealand government of the time.

NECESSARY CONDITIONS FOR IMPLEMENTATION OF THIS STRATEGY

To make the strategy work, Fortex needed to:

- identify and develop new markets;
- use highly focused marketing strategies to attract premium prices for its product;
- access a sufficient supply of quality livestock for processing to meet this demand;
- develop new expensive plant capable of a high level of further processing and of producing a range of products to meet customer needs;
- readily access finance to allow this development to take place;
- generate sufficient operating cash flow to cover operating costs and debt servicing;
- maintain its initial advantage in both use of labour and in the overtime free method of paying labour;
- have favourable economic conditions; a foreign exchange rate favourable to exporters from New Zealand and relatively low interest rates within New Zealand were key factors required.

These conditions represented an interdependent portfolio. If any one of these conditions was not met it had the potential to undermine the organisation. In 1988 Fortex formulated a five year business plan designed to guide implementation of the strategy.

NEW MARKETS

The marketing strategy was successful and outlets for product in Europe were established. Sales turnover increased significantly (See table 1 below).

TABLE 1
FORTEX GROUP LIMITED, SALES TURNOVER 1987-1993

Year	Sales turnover(million $)
1987	51 587
1988	66 165
1989	74 662
1990	136 486
1991	213 153
1992	297 108
1993	285 288

Fortex was first and foremost a marketing company. Thompson and his team had developed marketing expertise long before they entered the processing of meat. This expertise and success brought its own problems however. New clients and expanding markets had to be serviced. In 1989 Fortex announced that a further processing plant would be built in Otago at Silverstream (the lower South Island) to provide extra capacity.

SUPPLY OF STOCK

The new Silverstream plant required large volumes of quality livestock for processing. Alliance at this time processed about 85% of the available livestock in the Otago region. To be viable, Silverstream needed to capture at least 25% of the available stock. This put Fortex in direct competition with Alliance in purchasing livestock from farmers. Because livestock numbers could not be increased at short notice, the entry of Fortex to the market resulted in a shortage of suitable animals for processing. A procurement war between the three processors inflated the prices being paid to farmers. In 1992 and 1993 in particular, this price war resulted in Fortex selling product for less than it cost.

PLANT DEVELOPMENT

The Silverstream plant was built and commissioned in November, 1990. It was capable of a high level of further processing but was not capable of freezing whole carcasses. This meant that product had to go to market in chilled form whether the market price was profitable or not. The Seafield plant was also developed further. Capital works at both Silverstream and Seafield were completed in 1992.

FINANCE

The new Silverstream plant was built for $52.5 million (a cost overrun of $7.5 million). It was financed by a public issue of equity which raised $31 million; the remainder was financed by debt. The listing of Fortex on the New Zealand Stock Exchange mean't that it differed from its competitors in that it had equity investors as major stakeholders. Both Alliance and Primary Producers were co-operatives whose major stakeholders were suppliers of stock (i.e. the farmers). Suppliers principal concern was to obtain good prices for their stock; profits were a secondary consideration. Fortex, on the other hand, was faced with demands for profits and dividends from equity shareholders as well as demands for good prices from their suppliers.

CASH FLOWS

Despite steady increases in turnover between 1985 and 1992 Fortex was only able to generate positive operating cash flows in two of those years (1989 and 1992) (See table 2 below).

TABLE 2
FORTEX LIMITED, SUMMARY OF CASH FLOWS 1989-1993

In $000	1989	1990	1991	1992	1993	Total
Operating cash flows	8 979	(8 317)	(19 853)	6 867	(16 368)	(28 692)
Investing cash flows	(7 199)	(20 066)	(49 135)	(22 886)	(10 974)	(110 260)
Financing cash flows	(3 768)	43 800	56 676	14 963	29 716	141 387
Total	(1 988)	15 417	(12 312)	(1 056)	2 374	2 435

The inability to generate positive operating cash flows resulted in an increased debt burden at the same time as debt financing was being used to partly finance capital developments at Silverstream and Seafield. The high cost of purchasing livestock was a key factor in creating these adverse operating cash flows.

LABOUR

In 1991 the New Zealand labour market was deregulated. Fortex's competitors who previously had been locked into arrangements with the trade unions which restricted their use of labour and required penal rates to be paid for overtime, were able to adopt labour use and payment practices which resulted in huge cost savings for them. The substantial advantage held by Fortex in this area evaporated.

ECONOMIC CONDITIONS

During the early 1990's the New Zealand economy prospered and the free market policies of the government were hailed as a model which other countries might imitate to their advantage. This confidence translated into a relatively high value for the New Zealand dollar and of course lower real returns for exporters. Fortex continued to "add value" to their stock by further processing but this was not rewarded adequately because of the high exchange rate. High growth in the New Zealand economy also mean't strong demand for capital resulting in relatively high interest rates. Both of these general economic factors acted to the detriment of Fortex.

CONCLUSION

Fortex stopped processing at both plants on March 21, 1994. The company was subsequently liquidated. 1800 workers lost their jobs; creditors, lenders and shareholders lost in the region of $70 million. A strategy which was applauded by most commentators had eventually failed and caused pain for many people. Was this company the victim of adverse circumstances beyond its control or was the strategy devised by management at fault?

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A CASE OF SOCIAL AND LABOR INSERTION OF THE DISADVANTAGED: REFERENCES TO ORGANIZATION THEORY

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Abstract

Among non-governmental organizations (NGO) the institutions of Social Reinsertion, and more concretely, institutions of initiatives for the social and labor insertion of the disadvantaged, in our opinion play a very important role in the new economic-social order. These organizations have a clear mission, even if most times they cannot achieve their goals. There are multi-factorial reasons, as much economical, social, anthropological ones as of management. Such a complex reality requires the crossing of many disciplinary approaches, which is why we present a case to this regard as well as the consequences deriving from it in the scope of our research.

OBJECTIVES

Our aim is to elaborate a case that lets us in some way reflect the key traits defining insertion, its problems and possible solutions. One of the multiple dilemmas [Perrow, 1990] that this kind of organizations face consists in trying to be particular with respect to whom to remunerate and give the honor to carry out the job.

It is clear that there is an ample interdisciplinary concern [Boulding, 1987] regarding this kind of organization. Nevertheless, to be productive, these organizations have to operate in a certain framework of coherence with the environment. They have to develop their own structure, this being the main job of the general systems theory. This is why in our work we considered the organization as a whole, even if focusing on a concrete aspect, that is, we thoroughly analyze a specific process that makes sense in a whole. Therefore the framework of reference of our paper is the institutional school [Selznick, 1969]. We shall see that the social and labor insertion of a disadvantaged person in a social environment is a task that requires the common endeavor of various organizations with professionals from different fields of knowledge, psychologists, doctors, sociologists, administrators, etc. The fundamental problem consists in: How should these organizations orient their work teams in order to achieve the greatest number of times their reinsertion goals? For this purpose our work is focused on finding, selecting, and developing a case that lets us evaluate and diagnose the importance of the task they have to carry out and the difficulties they find in their performance.

Once we obtain a case of such traits to reflect this problem, we shall be enabled to provide a qualitative basis to let us develop posterior works, of scientific character. When we locate fundamental problems, the following step is to raise questions that could give solutions, and could let us elaborate theories that help in improving the efficacy of the results pursued in this type of organization. It is the social scientist [Katz and Kahn, 1980] who wishes to understand human organizations, and describe all the essentials in its form, aspects and functions.

METHODOLOGY

The methodology we shall follow can be resumed in the following steps:

1. Selection of institutions.
2. Contacting with the institutions.
3. Work sessions.
4. Case elaboration[1].
5. Case filtering.
6. Second case filtering.
7. Institutions sending back the case.
8. Case efficiency tests.
9. Case evaluation.
10. Selection of a model case

1. We selected seven institutions of similar characteristics, medium-size organizations, with an average of forty people, at least ten years of existence. All of them are well-known, accepted and respected in their environment. For many reasons, their implication with the environment seemed to us an important issue to take into account: the dependence between the environment and the organization [Levine and White, 1961]. Current organizations influence their environment at least as much as their environment influences them [Hylton, 1962]. Under certain limitations, an organization can structure and shape its own environment [Weick, 1969]. An organization's internal structure can radically change in relation to the nature of the environment [Burns and Stalker, 1961], etc.
   All the selected organizations have a high level of motivation and social implication and an equal and specific mission. The institutions we selected participate in a training program for professionals in initiatives of social and labor insertion[2] of the disadvantaged. These organizations were situated in marginal districts, with very low family incomes, high unemployment, and many dysfunctions of social character (drugs, alcoholism, delinquency,). What we should call a zone of margination (labor exclusion, social isolation and vital insufficiency), adjacent to a zone of what we should call vulnerability (precarious employment and unstable relations), which provides us a global perspective of the situation's profile.
2. Getting in touch with the institutions was relatively easy. Our participation as experts in the above referred training program let us propose a work schedule. These people's high motivation and their interest backed up and made possible our objectives.
3. We started with sessions with the directives and intermediate authorities. We interviewed psychologists, lawyers, sociologists, economists, social workers and doctors. Most work sessions took place in the institutions' head offices. They elaborated cases with fixed and most common problems, that at the same time most concerned them.
4. As a synthesis, 15 cases were elaborated. The institutions themselves worked out the cases during two years and under our supervision. For this purpose, they participated in a 20 hours seminar where the case methodology was explained as a tool of qualitative research.
5. Once the cases were prepared, we proceeded to do a first test, to discuss them in postgraduate courses. The observation of these work sessions permitted us their filtering and correction, for instance from redundancies, ambiguity, confusion, etc.
6. The cases were given back to the institutions, making them the pertinent comments on corrections to do, so that they could obtain a definite version.
7. After a final revision, the cases were again sent back to the institutions, to cover up data revealing the entities or the workers identity. Thus the cases were closed.
8. In a new schedule of work sessions, cases were again discussed in the presence of observers, thus obtaining the results. This was how we tested the cases and measured their efficacy.
9. After the case discussion in work sessions of several days, a panel of 20 experts was asked to answer by means of a personal interview the following questions:
   a) Which case did you like most?
   b) Which case taught you most?

c) Which case contained most clearly the problem brought up?
d) Which case most favored the discussion?
e) Which case contains the most common problem to all institutions?

With these five questions we pursued the following aims:

a) Simply to know the subjective perception about the case contents and how much the experts liked it.
b) We tried to measure the level of teaching efficacy of the elaborated cases.
c) Measuring the clarity of what is intended to find out.
d) Measuring the degree of viability for group discussion.
e) The last question is in our opinion the most important one as it let us calibrate what the studied organizations considered to be the chief problem. In such a process we found a valuable advantage, as a fixed problem is managed to average, that is, the fifteen elaborated cases contained a very broad range of situations. Let us then ask a sample, an experts panel, to show where they can find their organizations best identified and we shall so be able to evaluate the best case for our purposes. The answers were scored on a Likert scale ranging from 1 to 5. After tabulating and elaborating the pertinent statistics, we got the final case.

10. As a corollary of all this process, we obtained the model case which we denominated the "Ernesto Case", reflecting a problematic situation for the studied organizations.

"THE ERNESTO CASE"

Ernesto, 22 years old at present, is the youngest but one of a family's 8 children (Annex I), living in a peripheral district of a county capital, characterized by social exclusion. His father's job, emigrant and sailor, kept him away from home until Ernesto turned 12. His mother, an alcoholic and with a record for prostitution, died when he was 4. Under this situation his father decided to enroll Ernesto, together with three other sisters (the youngest ones) in a public children's institution dependent on the County Council, arguing his economic precariousness.

Between the ages 4 to 10, Ernesto stays (together with his sisters), in the boarding school without leaving permits nor external family relations, and by that age he begins to spend with his family some weekends and vacation periods. He definitely leaves the institution at the age of 14 or 15 and lives with his father, the father's girlfriend, their son and a nephew and a niece. Ernesto does not go to school nor does he work.

The Community Social Services begin their intervention in the family two years later (1992), after detecting severe social problems and risk situations. Among these situations it is to note that Ernesto's father had taken in three grandchildren from two of his daughters, who are prostitutes and drug addicts. This intervention consisted, among others, in the formalization of a behavior contract with the father in exchange for an economic subvention (Annex II). Among the compromises Ernesto's orientation towards different educational and training alternatives is also recorded, as well as the father is informed about the need of allowing communication and affectivity with his son Ernesto.

Between the middle of 1992 and beginning of 1993 Ernesto enters two Professional Job Training Centers for the disadvantaged, in neither case finishing any of the training programs.

In September 1993 Ernesto, by proposal of the Social Services, is incorporated in a process of Professional Orientation and Training integrated in a program of Adult Education, directed to young unemployed people between the ages of 16 and 30 (ORIENTRATE) (Annex III). During his stay in the referred process, his teachers and orientating professionals note an acceptable behavior of assistance and punctuality, even if his low educational level (analphabet-recently alphabetized) impeded his advancing in the Professional Orientation process.

In November 1993, together with two other students of the same condition (one of them, his sister Rocio), he is offered to enter a group of recently alphabetized young people, in another adult educational center of the zone.

In the academic course 93/94 he enters the Adults Center (Annex IV), staying there until the end of the course 94/95. The teachers he was in contact with in this period manifests the accomplishment of timetables and the assiduity in the assistance (Annex V). He assisted to academic classes, not showing any interest for other kind of activities, in some occasion even sleeping during these activities. He manifested a verbally aggressive behavior, without reaching physical violence, above all towards his sister with whom he assisted to classes and sometimes towards his teachers. Frequent conflicts influenced the rest of his peers provoking that part of the students abandoned.

This behavior provoked the intervention of the Support Team of the Program that centered his orientation, among others, in certain activities to raise his level of self-esteem, but the student refused to carry out the proposed activities. "We observed a clear need of psychological help for this student. His academic level was Recently Alphabetized and without any possibility of progress, because of his lack of balance and tranquility".

He gives up assisting to the Adults Center and assiduously begins visiting a sister who lives with a well-known drug trafficker (according to neighbors' information). His father suspects that he is becoming a "drug addict", and threatens him with throwing him out from home if he does not work and goes on seeing his brother-in-law.

Ernesto, thinking that his father only wants the money, decides to leave home and goes to live alone in an apartment belonging to his uncle who spends long periods at sea. This apartment does not have either water or electricity.

In the sessions with the Social Services Team he manifests not having drug problems, saying he controls use of drugs well and already has the experience of his drug addict sisters.

At the end of 1995 the police arrest him for drug possession, he pleads guilty by advice of the official lawyer and is sentenced to approximately 2 years of prison.

The flood at the beginning of 1996 destroys the house of his father who moves, together with his family, to the apartment where Ernesto had been living, which is why he moves to his sister's (Ana), married, with two children and a normal family life.

During the first semester of 1996 Ernesto begins to attend a rehabilitation program for drug addicts, needing that a family member accompanies him to start the process. Neither his father nor his sister Ana say they are able to accompany him mainly alleging problems of time disposal so he leaves the program after one week's time.

Ernesto does not join the Military Service and is declared a deserter.

In July 1996, by orientation of the Social Services, Ernesto applies for the selection process of a Training Program in disadvantaged capital districts, directed to young unemployed people between the ages of 16 to 30 years, characterized by an eminently practical and granted (75% of minimum wage) occupational training with a support to the labor vitalization for the employment and a social vitalization program.

Ernesto is selected to be a student in the above program, which fact permitted him putting off the serving of his sentence. In January 1997 he started his education entering the workshop he had previously selected (bricklayers), and was oriented to participate in the Compensatory Training program (Adult Education), of voluntary assistance, soon abandoning it (Annex VI).

Since the beginning of the Program, his behaviors have been: refusing to carry out the tasks commended by his monitors, verbal confrontations and threats to them, unpunctualness, etc. These conducts caused verbal warning and disciplinary proceedings (Annex VII).

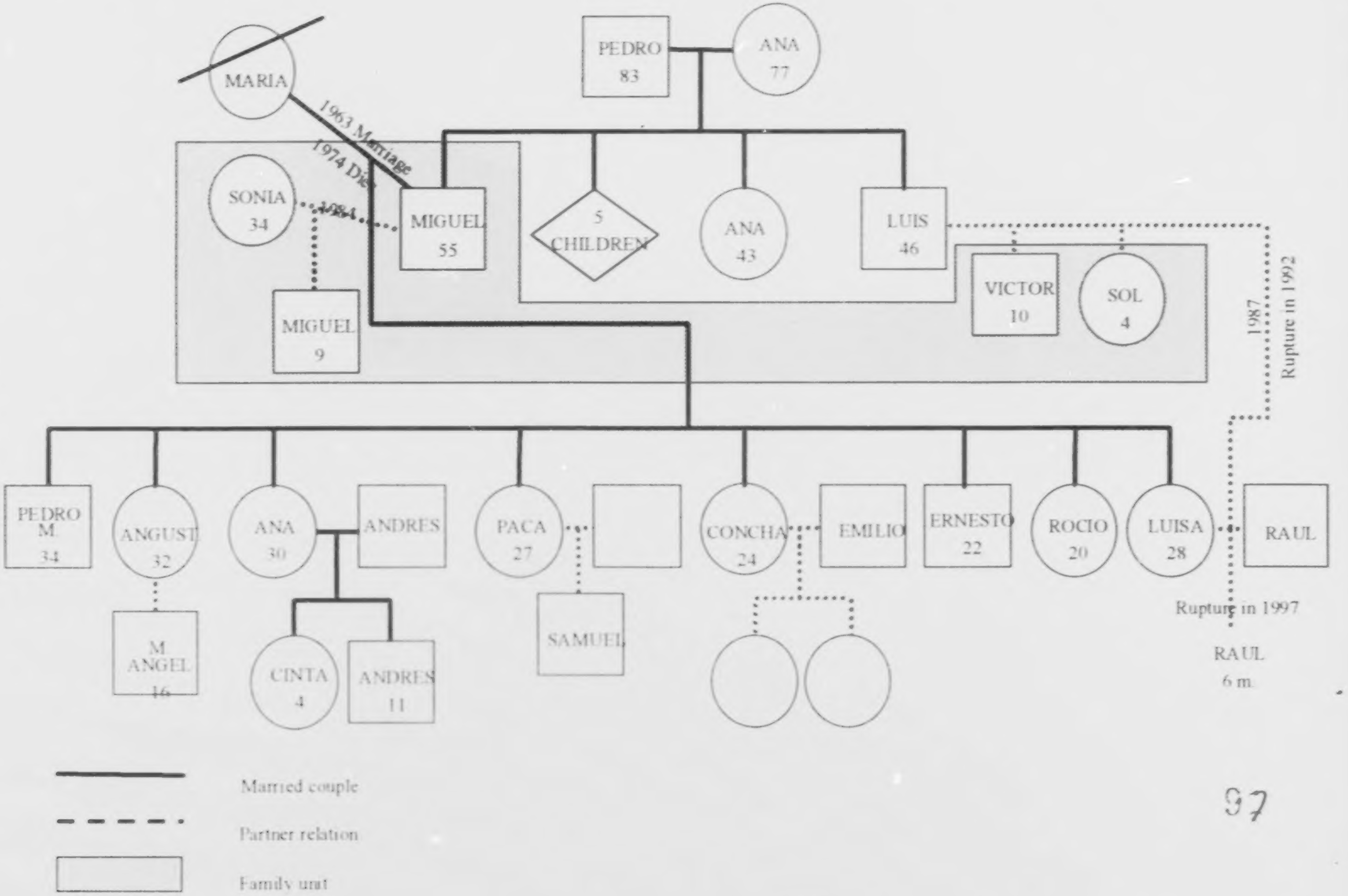
The monitors in charge of his training declare that Ernesto maintains an attitude of lack of adaptation to the training (unpunctualness, lack of assistance, verbal confrontations and menaces, and lack of interest), and "suspect he consumes drugs". In March 1997 Ernesto is surprised by a monitor while stealing materials from the training center's warehouse, which fact provokes a new disciplinary situation with 5 days of assistance without receiving the grant, and a warning of expulsion. The Social Services, within their program of individual-familiar intervention, work with Ernesto on the change of his behavior and attitudes by means of a conduct contract.

In April 1997, before his repeated behavior and the opening of a third disciplinary proceedings, apart from the breach of his conduct contract, the Program team unanimously decides his expulsion.

The Social Services advise him to resolve his problem with drugs in a detoxification center. He denies having drug problems and asks to get back to the Program.

Soon he enters prison to serve his outstanding sentence. Why has the objective of Ernesto's social and labor insertion not been fulfilled? What role have the Public Institutions played in the process?

ANNEX I
GENEALOGICAL CHART 1992-1997


PEDRO 83
ANA 77
MARIA
1963 Marriage
1974 Die
SONIA 34
1984
MIGUEL 55
5 CHILDREN
ANA 43
LUIS 46
MIGUEL 9
VICTOR 10
SOL 4
1987
Rupture in 1992
PEDRO M. 34
ANGUST 32
ANA 30
ANDRES
PACA 27
CONCHA 24
EMILIO
ERNESTO 22
ROCIO 20
LUISA 28
RAUL
M ANGEL 16
CINTA 4
ANDRES 11
SAMUEL
Rupture in 1997
RAUL 6 m.
Married couple
Partner relation
Family unit

BEST COPY AVAILABLE

ANNEX II
CONDUCT CONTRACT

In a session on December 9 of 1992, the following compromises were agreed and commonly consented with the family of Miguel and Sonia, with the objective of improving their social-familiar situation:

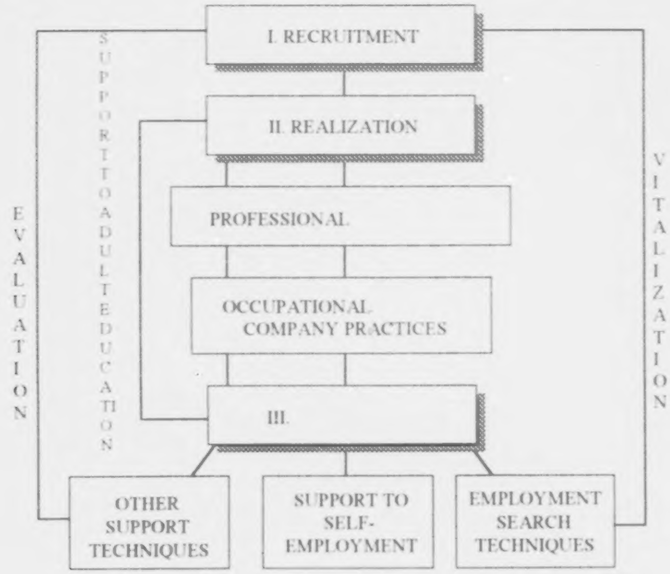
Family of Miguel and Sonia:

-Appearing each 15 days in the Service of Permanence. In case of receiving a family subvention, to bring the bills of the expenditures.
-Daily school attendance for Rocío, Miguel Ángel, Víctor, Sol and Miguel.
-Ernesto's searching for an alternative to his academic education.
-Rocío, Ernesto and Miguel Ángel's attending training sessions in social abilities (they are to be notified later on).
-The children under age must attend extra-school activities if there are any.
-Miguel and Sonia's working on the relationship and care of the youngest children.
-Looking for alternatives to improve the economic situation.

The Community Social Services Team:

-Informing, advising and orienting in all the necessary arrangements and actions.
-Psycho-social support and intervention.
-Evaluating the development of the social-familiar situation.
-The recorded compromises will be broadened by mutual agreement, according to the case's evolution.

ANNEX III
ORIENTRATE


I. RECRUITMENT
II. REALIZATION
PROFESSIONAL
OCCUPATIONAL COMPANY PRACTICES
III.
OTHER SUPPORT TECHNIQUES
SUPPORT TO SELF-EMPLOYMENT
EMPLOYMENT SEARCH TECHNIQUES
EVALUATION
SUPPORT TO ADULT EDUCATION
VITALIZATION

ANNEX IV

The father of the subject of study continues assisting, at present with absolute normality, to the FIRST CYCLE level of Urban Education. He maintains a totally formal conduct and a high degree of interest for the study matters.

Family relationship	Level or Cycle	Course/s	Degree Obtained
Father	Urban Education	1996-97 // 97-98	
Mother-in-law	School G1 Soc. Labor Prom.	1996 - 97	Graduate
Sister	Recently alphabetized Cycle 11 Ceramics Workshop MAREP Project	1993-94 // 94-95 1995-96 in which she abandoned for a granted course	
Subject	Recently alphabetized	1993-94 // 94-95	

ANNEX V
CASE STUDY: ADULT EDUCATION
INTERVIEW WITH THE ADULTS' TEACHERS

The pupil to be studied enrolls in the Permanent Adult Education Center in the 1993-94 course, staying there until about the end of the course 1994-95.

The teachers he was in contact with during this period manifest the following appraisal of the situation:

- The student had a good level of assistance and punctuality but it was to note that his father was exerting a rather close control over him in order to comply with the timetables and assiduity in the assistance.
- He attended academic classes, not showing any interest for other sort of activities such as workshops.
- He often fell asleep in class, alleging reasons like his looking for an employment. He spent his time mounting and dismounting sales stalls in exchange for only food. He very assiduously frequented these jobs.
- He manifested a verbally aggressive behavior, without reaching physical violence, above all towards his sister with whom he attended classes and sometimes toward his teachers, whose evaluation regarding this attitude was a total unbalance. He often refused to work, yelling words like: "*I'm fed up*" after concentrating on the task for not more than 10 minutes.
- He had frequent conflicts with his sister whom he insisted on closely controlling and exerting a role of father on her.
- These conflicts influenced the rest of the classmates, provoking a large part of the adult and more mature students to abandon the class, either changing to another group or directly leaving the Center.

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- This behavior provoked the teachers to make the Adult Education Program's Support Team intervene. This support team centered their orientation, among others, on activities to raise his level of self-esteem, but the student in question resoundingly refused to carry out the activities proposed by the teachers. Due to his emotional unbalance, a clear need for psychological help was observed. The Support Team got more centered on Rocío when the manifest attitudes of this student had to be considered impossible. When this team suggested problems related to the family and the world of drugs, both youths firmly refused to speak.
- The academic level of the student, appreciated by the teachers, is Recently Alphabetized, without any possibility of progress due to his lack of equilibrium and tranquility.
- The student's father is attending classes of Urban Education at the same Center and has a completely formal behavior, manifesting a high degree of interest.

ANNEX VI

SOCIAL AND LABOR INSERTION PROGRAM

40 UNEMPLOYED YOUTHS UNDER 30 YEARS OF AGE

	SOCIAL VITALIZATION	OCCUPATIONAL TRAINING IN PRACTICES	LABOR VITALIZATION (ADL)	COMPENSATORY TRAINING
OBJECTIVES	Increase the social and working competence of young people	Raise the professional qualification, by means of technical training and practical experience	Vitalize young people for the training, employment and social and labor insertion	Raise the basic educational level to improve skills and knowledge acquisition
ACTIVITIES	Intervention of the Social Services at the levels - Individual - Community - Groups - Social abilities workshop - Self-esteem workshop	Granted and alternated theoretical-practical training in tasks of urban conditioning - Bricklaying workshop - Gardening workshop Duration 1 year	1st Phase (1 year) Support the individual training process (detecting lacks, following, orientation, personal interviews, etc) 2nd Phase (6 months) - Individual and group processes of professional orientation, employment search techniques, self-employment - Labor insertion projects in public and private firms - Orientation to employment and following	Compensatory training to young people of a very low level for obtaining School Graduation Instrumental and support education for professional training (workshops)

ANNEX VII
SOCIAL AND LABOR INSERTION PROGRAM

ISSUE: OPENING OF PROCEEDINGS
DATE: 04/30/97
N/Ref.:

DISCIPLINARY PROCEEDINGS

Proceedings No.: 10/97

The motive of the present record is the opening of Sanctioning Disciplinary Proceedings against ERNESTO, student of the Social and Labor Insertion Program, for the facts below reported:

On Friday 04/25/97 the referred student was surprised stealing inventoried materials belonging to the education center (an ashtray) from one of the classrooms and giving it to another student of the

Program without having any permission for it. The Program coordinator was informed of this fact by one of the students who showed concern for any implications in this event.

On Monday, April 26 at 11'20 o'clock and after getting back to the Program from the period for coffee break, the referred student asked the monitor JOSÉ for an authorization to leave for 10 minutes to buy cigarettes; the permission was denied arguing that he had had enough time during the break. This refusal was also based on his reiterated lack of punctuality at the time of coming back to class after the morning break on previous days (30 minutes' delay). Ernesto, responded angrily and with menaces to the Monitor's answer, refusing to accept the given instructions, till the point of absenting himself from the Program without permission.

After these events occurred, Ernesto met the Program Coordinator to complain about the Monitor's attitude. The Coordinator explained him that his Monitor was the only responsible for his arrivals and departures from the Workshop, and that Ernesto's behavior by no means had been correct.

All the above reported, even being severe, are not isolated facts, since Ernesto had in several occasions incurred clear signs of indiscipline and disrespect for the Monitors, for which he was verbally warned on the days 02/5 and 02/25/97, and the following was recorded: Disciplinary Proceedings No. 03/97 dated on 03/11/97 for Grave Faults (refusing to follow the training and verbal confrontations) and on 04/01/97 for Very Grave Faults (for stealing materials from the training program).

This incident was communicated to the Program Coordinator by the above Monitor, who called together the responsible experts of the Social Intervention Program (Psychologist and Social Worker) to the ADL, Monitors and the persons in charge of the Training and Employment Area. In the referred meeting the youngster's maladjustment to the Program was discussed.

According to the events which occurred on the days April 25 and 28, and taking into account the above records, this Proceedings (No. 10/97) is opened, sanctioning him with Very Grave Faults for *"Disrespect and disobedience manifested to the Monitors (art. 19.2e), petty theft or stealing (art. 19.3c) and for relapse in grave faults (art. 19.3g)"*. For what it is decided, according to the meeting of the above indicated team of experts, his expulsion from the Training Program due to his maladjustment, as his reiterated faults showed. This resolution is applied by the norms in force for this type of training programs, developed by the "Consejería de Trabajo de la Junta de Andalucía" (FIP Plan) and the Program's Internal Regulations themselves, approved by the Commission of Coordination where all the participating members are represented.

This resolution will be raised to the corresponding authorities and communicated to the interested in writing.

Signature:
Intervention Project Coordinator

Signature:
Training Program Coordinator

Signature (04/30/97)
Ernesto

CONCLUSIONS

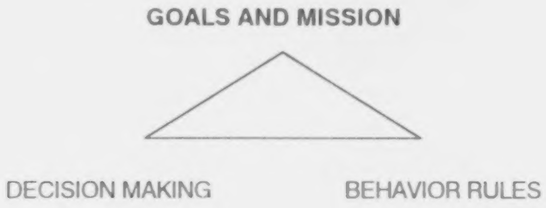
The case we present is interdisciplinary in its elaboration since psychologists, sociologists, doctors, lawyers and economists all worked on it. It records a specific and important problem: Why is the objective of social and labor insertion of people so often non-fulfilled? And what role do the organizations play in the process?

We tried to follow three fundamental premises [Pfeffer, 1995], in the work development: 1) what we know today about organizations is a consequence of the way the questions had been formulated and phrased, 2) the way the questions have been phrased in great part is in function of the organization, as well as of the social context it works in, 3) or, it is possible that there are some more fruitful approaches to raise the questions so that the theory development advances at a faster and permanent rhythm.

Apart from selecting the case and formulating questions to open a possible debate in the field of some specific organizations, the institutions of social and labor reinsertion with disadvantaged persons, we tried to show some possible ways of solution to take in account, as a result of the deep knowledge we have gained in the course of our work. Therefore the concrete case allowed us to make a series of specific considerations that we resume in the following:

There are referents, but no-one practices really as a tutor of Ernesto; it should be an only person to canalize affectivity. No labor insertion can be considered while serious social problems exist (with family members, psychological and drug problems, etc.) without solution.

There is lack of coordination and integration, both between groups and in the processes. The process and the coordination between the parts must be restructured. A "war" of competencies must be avoided among groups, individuals and organizations. Responsibilities are therefore diffused.



GOALS AND MISSION

In the Ernesto case the goal can be relatively easily established. Success is measurable and verifiable, this individual must achieve social and labor integration. But human teams experiment some uncertainty regarding the mission, since they do not know either when they will be successful or if they can be successful at all. Questions of priority are getting complicated. Even if the organization is well structured [Blau and Scott, 1985], the beliefs and the shared orientation that join the organization members and guide their conduct are correct, it is not enough. The complexity of the task would require that all of them are experts in every phase of the process, which is not possible. How can it be resolved? Making good planning, sharing the available information, and applying them to the task. There is the importance of good planning that will provide security and direction at the short run, without forgetting the goals. All this requires the recollection, management and optimization of all the possible information.

DECISION MAKING

From the above indicated, as a formal analytical point of reference, the primacy of orientation is used as defining characteristics to obtain a specific goal [Shafritz and Ott, 1987] which distinguishes it from other types of social systems. This requires a process of decision making that is more complex than for other types of institutions. Decision making must be participative, democratic, between equals, routinely and programmed decision making will be an exception. Decisions must be a confluence of very different professional criteria of doctors, lawyers, psychologists, social workers, cultural animators, etc.

RULES OF BEHAVIOR

In the study of our organizations we agree with [Rubin and Beckhard, 1972], in pointing out that there are several deeply rooted norms: a) "In decision making, silence gives consent", b) "According to the profession, some people are more important than others", c) "The best thing is not to meddle in what is not your business". Conflict is something dangerous, d) The process does not allow any flexibility.

These rules of conduct have their negative side. These organizations' mission requires a high degree of flexibility. This is not in dissonance with a clear organizational goal [Graus, 1987] at the disposal of the personnel to facilitate the achievement of some accorded objectives, by means of the allocation of functions and responsibilities. In any case, conflicts will be always present in the organizations [Morgan, 1990].

The use of coercion [Etzioni, 1961] makes the identification with the organization's representatives very little probable. To foster the motivation of the persons to be reinserted, the members of the organization have to reach a non-rational compromise since the disadvantaged person has no precise knowledge to accept the reinsertion guidelines from a rational basis. Finally, the manipulation of wages, fines and rewards does not lead to value internalization. In the best case it causes superficial, convenient and open compromises.

ENDNOTES

1. Both the Human and the Financial Resources of the local Employment Observatory of Huelva permitted us carrying out the referred work, through European Regional Development Funds. Our special thanks to: Fernández Álamo, J.L.; López García, C.; Macias González, A. and Tenorio Salgado, F.J.

2. Joined to an URBAN project of the European Union (European Social Fund), titled "Huelva en Acción" Project. URBAN Program. December 1996.

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PROBLEM BUSINESSES:
CASE STUDIES ON CONSUMER COMPLAINTS

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Abstract

This paper illustrates how the case method was used as both a teaching and research tool in an effort to understand why certain industries are plagued with third-party complaints. Graduate management students, enrolled in two different marketing course at a private mid-western university, engaged in a case research and writing project. The opportunity to participate in this exercise arose out of an existing educational and research partnership between an academic business ethics center and a major metropolitan Better Business Bureau (BBB). The case studies were remarkably successful in capturing and tracing the complicated development and communication that surrounds the serious complaints filed with the BBB.

INTRODUCTION

Complaints by consumers to the Better Business Bureau (BBB) are frequently interpreted as charges of unethical business practices, while the role of the BBB is, in turn, often identified with the business community's effort to minimize such practices through a policy of self-regulation. Yet the causes and implications of third-party complaints such as those filed with BBB are not well understood. Indeed, the line between poor business practices, on the one hand, and deceptive or illegal tactics, on the other, remain unclear. For its part, many businesses feel that complaints filed with the BBB are often unfair, inaccurate, or otherwise of questionable origin and motive.

The project described in this paper is the most recent in a series of collaborative efforts between the Better Business Bureau serving Eastern Missouri and Southern Illinois and the Emerson Electric Center for Business Ethics (EECBE) at Saint Louis University. One basic purpose of this existing educational and research partnership has been to use consumer complaints filed with the BBB as a basis for improving business practices. Of special interest was the connection among issues of product quality, employee service, and ethical practices. In previous studies undertaken by the research team, a pattern of "complaint escalation" had been observed whereby problems of poor product quality or those caused by incompetent or discourteous employees developed into charges of illegal or unethical business practices.

STUDENTS AS CASE RESEARCHERS

The focus of this particular project has been those industries that are typically plagued with complaints filed at the BBB. The BBB (at both the national and local level) has maintained a wellpublicized list of the Top Ten Industry Complaints. The most recent list published by the St. Louis BBB is provided in Table 1.

TABLE 1 - TOP 10 INDUSTRY COMPLAINTS

Franchised Auto Dealers
Auto Dealers-used
Home Remodeling Contractors
Auto Repair Shops
Home Furnishing Stores
Mail Order Product Sales
Dry Cleaning/Laundry Companies
Roofing Contractors
Telephone Companies
Floor Covering Stores

MBA students acted as field researchers investigating actual complaints from these ten industries that had been filed (and closed) with the BBB. Students were charged with collecting information from both the complainant and the business in question and then developing a case study based on their research.

For its part, the local BBB wanted students to create a series of short cases to be used as examples of consumer complaint, customer satisfaction, and customer service issues. The goal was to provide the BBB with a set of cases useful for training and educational purposes, while also offering students a unique educational experience in the disciplines of consumer behavior and marketing management. The ethics center was similarly concerned with educational issues, wanting to encourage the use of case studies in the classroom in order to facilitate discussion of ethical principles in business decision-making.

These case studies were part of a larger research project on the BBB's "Top Ten" industry complaints, which ultimately included focus group interviews with business owners and managers and a large-scale survey of complainants. But the development of case studies from two MBA classes—one a consumer behavior class, the other marketing management—at St. Louis University represented the initial or exploratory phase of the project. The following sections offer an account of the case development process.

PHASES OF THE CASE STUDY PROJECT

This project can be broken down into four phases. The first phase involved laying the foundation for the project by exposing the students to the history and purpose of the BBB and explaining the role of the case studies within the larger project. A representative of the BBB gave students an overview of the organization, followed by a question and answer period. Many of the students, especially international ones, were unfamiliar with the BBB. Others had vague notions of the BBB as a clearinghouse for consumer complaints, but were unaware of the scope of the agency's efforts, which include complaint resolution and arbitration services as well as offering a variety of training and information products to businesses, consumers, and the media.

At this time, the BBB representative also acquainted students with the nature of the complaint data they would be analyzing. In a more general vein, students were given a list of the most common complaints received by the BBB, as shown in Table 2.

TABLE 2 - COMMON COMPLAINTS TO THE BBB

Failure to respond.
Deceptive sales.
Incompetent/discourteous workers.

Poor repair work.
Failure to provide promised refunds/adjustments.
Billing errors.
Poor product or service quality.
Deceptive advertising.
Delays in delivery.
Lack of follow-up contact.

Students were then also provided with actual complaint histories, from which they selected the actual incident, that would be the basis for their case study. These incident reports provided the name of the complainant, a contact person from the business and a brief description of the complaint and its outcome. The following is a sample of the description and outcome of the complaint:

> Complainant version:
> I contacted this firm to repair my car on 10/17/97. The amount quoted was $651, but I was charged $927. The car is a 91 Mercury Cougar with 96,000 miles. The problem I am having with the car is the head gasket blew. The company was supposed to replace it. I am dissatisfied with the work because the engine went out a week later. To resolve this complaint I would like the company to refund about half of the repair bill since they didn't check to see the condition of the engine before they replaced the head gasket.
>
> Company version:
> We did not quote a price. We only stated an estimate. After he drove the car for 650 miles and the car was towed to our shop, we noticed that something else caused the problem, not what we did.
>
> Case closed as: Disputed

The industries included auto dealers, dry cleaners, floor-covering stores, telephone companies, and others from the "Top Ten" complaint industries. Students were paired and three to four case histories were distributed to each group to ensure one usable case per group. Some cases were not usable because either the business or complainant could not be reached or refused to participate.

During the second phase, it was necessary to supplement the textbook material with readings that gave students a deeper understanding of consumer complaining behavior and consumer satisfaction/dissatisfaction as well as the related marketing management literature. For example, students in one class (with a focus on consumer behavior) were required to read articles (e.g., [Singh, 1991], [Bearden and Teel, 1983], and [Day, Grabicke, Scaetzle, and Staubeck, 1981]) prior to a class discussion of complaint issues and the case research process. Students in the other class focused more on the management of customer service [Fisher and Garrett, 1998].

After ensuring that the students had an appropriate background, the class participated in a brainstorming session to generate a set of questions to ask the customer and the business representative. This was an important exercise which helped students to think through the entire process. They were able to go beyond the obvious questions of who did what to whom, and developed questions that got to the root of the problem such as what were the customer's expectations. The following list is a sample of the questions:

> Questions for complainant:
> Did you contact the company directly and attempt to resolve the problem before contacting the BBB?
> How quickly after the problem occurred did you contact the BBB?
> What were your expectations of Company XYZ?
> Did you contact the BBB prior to using this company to check its record?
> How do you feel the BBB handled your case?

Were you treated courteously by Company XYZ?
Would you ever use Company XYZ again?

Questions for company:
Do you have a complaint response procedure in place?
Have other complaints been filed against you and, if so, what is the status of those complaints?
What are your expectations of the BBB?
Has the BBB handled this complaint appropriately?
Has this complaint caused you to change your customer service process in any way?

The third phase was performed by the students outside of class. The students contacted the businesses and the complainants to augment the information provided by the BBB. The BBB prepared a statement for the students to use when interviewing complainants and company representatives, explaining that the "*Better Business Bureau is conducting a study about business practices in the St. Louis market area.*" The students were also encouraged to seek outside information on the business and the industry. Each class period students were encouraged to discuss any problems they might be having with the interviews, data gathering, or finding the appropriate interpretive thread for their case narrative.

The fourth and last phase consisted of presentations by the students of their respective case studies. This took place during the final class periods, with representatives present from both the BBB and the EECBE. These individuals questioned students rigorously on the specifics of the case. Students discovered that customer and business accounts frequently were quite different and thus found it a challenge to take these conflicting stories and fashion them into a coherent case study. The questioners tried to shift the emphasis from this focus on "who was at fault" to a consideration of the implications of such incidents for managers who are responsible for consistently delivering customer satisfaction. In this way students were challenged to think beyond the case particulars and to place their efforts in a more general managerial context. Thus, students moved over the various phases of this project from the general (i.e., the initial conceptual text and articles) to the specific (i.e., the case study) and then back again to the general (i.e., the managerial implications).

OBSTACLES

Although a consumer complaint behavior project was a natural fit for a graduate marketing course, the "real world" often resists the classroom setting without some coaxing. One restriction was an extremely limited amount of time due to a 6-week summer schedule. This time limitation was a disadvantage for obvious reasons, but could also be viewed as an advantage in that students were forced to maintain a high-level of activity on this project for the entire course. This project was discussed in every class session for varying amounts of time.

Another limitation was that the case study's emphasis on depth, was somewhat at variance with a survey course's emphasis on breadth. For example, most consumer behavior courses and texts devote modest attention to consumer complaint behavior. Supplementing this requires not only additional time and effort, but also may mean that other worthwhile topics are somewhat neglected.

OUTCOMES

This project proved itself to be worthwhile for the students and the BBB, as judged by student evaluations and more informal feedback from the sponsoring organizations. The students had the invaluable experience of seeing the complaint process from three separate points of view: the BBB, the business, and the customer. They learned about consumer complaints, customer service and customer satisfaction in a much more realistic context than that provided by a textbook, while still challenged to relate this specific incident to a larger body of research and practice. The following themes and conclusions emerged from the student cases:

1. The majority of the case studies revolved around situations that were "exceptions to the rule." The students seemed genuinely surprised by how the customer service policies and procedures that businesses create often do not fit the situations they are designed to cover.
2. Many of the complaints were based upon communication problems. A salesman told the customer one thing and the fine print said something different. One customer misunderstood a promotional offer in an advertisement. Frequently, lines of communication failed to function or were never utilized: contact in the form of conversations, letters, and telephone calls were either never made or not responded to. Not infrequently, the re-establishment of communications would result in the complaint being resolved. One the other hand, poor communication in the early stages of the buyer-seller relationship often resulted in a poor outcome.
3. Another common problem is unrealistic expectations or lack of product knowledge on the part of consumers. Because many of these purchases are infrequent and unfamiliar to consumers, these individuals do not understand what they are paying for or do not understand the product well enough to make good decisions.

One of the most valuable outcomes was that the case methodology highlighted the students' underlying attitudes toward customer complaints in a way that other teaching tools would not have. It is important to remember that the majority of these students are part-time MBA students with full-time jobs in the various business organizations. Therefore, one might expect a pro-business bias in the student analysis of these disputes. Nevertheless, their attitudes about customer service and complaints as revealed by the case studies indicate an underlying problem. A review of the cases revealed four surprising themes:

1. Consumers are often viewed as uninformed, ignorant or naïve. In one case, a complainant bought a car from a used-car dealer named "OK Junk Cars" and was not satisfied with the car after it required a major repair. The students who wrote the case implied that the customer got what they paid for: "Who would buy a car from a place called 'OK Junk Cars'?" In another case, complainants bought a very expensive white carpet and then complained that it wore quickly and showed dirt too easily. The students' response was summarized in their rhetorical question "What do you expect when you buy white carpet?" Several students criticized complainants for hiring companies to do expensive work without checking on the companies' reputation. While suggestions such as these are not without basis, they do suggest that students were more than willing to blame the complainants rather than the businesses for such problems. Furthermore, the customer-orientation, which is often cited as cornerstone of marketing, may be a concept that many professionally oriented students have little more than a facile understanding of. There may be considerable resistance or poor understanding of what is involved in actually implementing the marketing concept at the customer service level.
2. Most students mentioned the idea of illegitimate complaints or professional complainers in their cases. Several students stated that they believed the complainant in their case was a professional complainer or general malcontent. Likewise, company representatives gave estimates ranging from 50 to 80% of complaints as being illegitimate.
3. The idea that the BBB is frequently used as a weapon against businesses was mentioned in several cases. Students used phrases such as "the BBB was used to strong arm the company" and "the customer contacted the BBB to hurt the business." It is unclear if this idea came from the company representatives or from the students' perceptions.
4. Many students view the BBB is as an adversary, not a friend to business. One student wrote that the BBB "essentially convicts the business in question before it is proven guilty". Others claimed that the "BBB favors complainants" and several questioned the objectivity of the BBB.

Case studies have long been appreciated as a tool for deepening student understanding of the complexities involved in applying management concepts to actual business practice. This project has suggested that actually having students develop their own case studies in the classroom, while somewhat straining the limits of a traditional course offering, may deepen student understanding of the relationship between theory and practice. Although the maxim "difficult cases make bad law," may have merit in a legal context, in an educational setting these cases offered a natural and efficient way to support such important business school objectives as support teaching, research, and dialogue within the larger community.

POSTSCRIPT

Subsequent to the completion of this case study project the BBB and the EECBE continued with their efforts to understand why certain industries are plagued with third-party complaints. The cases proved to stimulate further research questions that were pursued utilizing such techniques as archival analysis, focus group interviews, and survey research. Focus group interviews, for example, allowed researchers to better gauge how progressive firms are able to meet the challenge of managing customer expectations, how firms try to prevent complaints, and how they respond to those complaints when they occur. Other issues identified by the case studies that received considerable expansion in subsequent research efforts were: pricing and product quality concerns, the role of buyer's remorse, and employees' impact on customer satisfaction.

Ultimately, as the character of this research shifted from exploratory to confirmatory, a survey research project was undertaken to measure the "complaint profile" of various industries and to better describe the varieties of complaining behavior. In this context, the responsiveness of companies was assessed against the backdrop of customer expectations.

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STRATEGIC QUALITY MANAGEMENT IN AN INTERNATIONALIZED UNIVERSITY DEPARTMENT: A CASE STUDY

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Abstract

Since the early 1990s, a number of initiatives of the Australian Federal Government have had a compounded impact on higher education in general, and for the teaching of accounting related studies in particular. The general impacts have been caused by the mergers of educational institutions following the *Dawkin's Green Paper* and the Quality Audits following the *Higher Education Council Report*. The specific impacts have been due to the aftermath of the *Matthew's Committee Report* on the quality of Accounting Departments, and the move towards entrepreneurship and internationalization of higher education due to various funding constraints imposed on the university sector.

Accounting departments that were ranked at diverse ends of the quality spectrum in the Matthew's report suddenly found themselves "merged" into one university due to the Dawkin's recommendations. These departments also found that accountancy studies was one of the more popular discipline areas in many of the targeted overseas markets. This internationally focused entrepreneurial thrust was, however, seen by many as being not only at the expense of the more traditional research orientation of university departments, but also as reducing the quality of the local-product as resources were dissipated and standards lowered in search of the almighty fee-paying overseas student.

This paper is an in-depth case study of a university department that was subject to all of the above pressures in the 1990-1996 period. It reports on the objectives, strategies and structures adopted by the department in such an environment, its attempt to manage quality of the programs within the department, and the performance outcomes achieved during the period. The case provides many useful lessons for Universities, and their Faculties and Departments, which wish to operate in a globalized environment.

INTRODUCTION

In 1990 under a Labor Federal Government in Australia, there were two initiatives that had a significant and far reaching impact on higher education in general, and for the teaching of accountancy related studies in particular. The first was the implementation of the government's higher education policy via what became known as the *Dawkin's Green Paper (Dawkin, 1987)* which created the environment for mergers between tertiary institutions, and the other was the release of the *Matthew's Committee Report (DEET, 1990)* which highlighted research and teaching quality (and other issues) in all the accounting departments of Australian Universities and Colleges of Advanced Education.

Accounting departments ranked at diverse ends of the quality spectrum in the Matthew's report suddenly found themselves "merged" into one university due to the Dawkin's recommendations. Further, research and teaching quality were not necessarily correlated. Still further, again as a flow-on from the Dawkin's Green Paper, universities were encouraged to become "entrepreneurial" and reduce their dependence on Federal funding. This latter policy-direction has become even more enhanced under the current Liberal government. Most often, however, in the early 1990's, Universities, Faculties and Departments that were strong in research and/or teaching, were not necessarily entrepreneurial, and vice versa.

The *School of Accounting* at the Chisholm Institute of Technology was subject to these multiple-pressures when Chisholm was merged with Monash University in mid-1990. Monash had its own strongly research-oriented Accounting and Finance department. Monash had also merged with the Gippsland Institute of Advanced Education which also had its own Accountancy Section. Thus, on the date of the mergers, there were three autonomous accountancy areas within one University, teaching in four campuses (Caulfield, Clayton, Frankston and Gippsland) and also overseas. This paper is a case-study of the objectives and strategies of the former-Chisholm based School of Accounting, to survive and prosper in such a changing environment, and a longitudinal study of the outcomes achieved in the period 1990 - 1996.

RESEARCH APPROACH

Before approaching the task of researching the implementation of quality management in an academic environment , the researcher reviewed the literature and the project requirements in three main areas: first, obtaining a framework within which quality management attributes could be evaluated; second, considering the previous case work that has been done in the service sector (especially the university environment); and third, considering availability of source materials and interview respondents in order to obtain the data for analysis and interpretation.

In terms of a *quality management framework*, the author found that the most relevant framework to be applied to this study was the ***Achieving Quality*** report published by the Higher Education Council (1992) because the department being studied had itself used this as an overview framework in terms of quality assurance in its education programs. In this paper therefore, the department has been compared to the quality attributes that have been listed in the above report.

The sections of the Achieving Quality report which may be relevant to the arguments in this paper is section 5 on Strategies (Higher Education Council, 1992, pp 65-85). This section considers:

- quality management at the institutional level, including a brief reference to TQM;
- the problems of measurement in assessing quality
- the strategies for quality assurance at the system level, including examples of current international best practice and current strategies at the system level in Australia;
- the benefits of a national structure for quality assurance;
- the shape of a national structure; and
- the operational issues, including audit and the contents of a quality portfolio.

Of those items, the most relevant to the paper were considered to be:

- that TQM is defined, its emphasis on the customer explained, and noted as being not commonly used;
- that there is a problem of measurement in assessing quality. The report states problems with measuring quality arise in three main areas: the measurability of the attributes of quality, the problem of discriminating between change and improvement, and the difficulty of establishing which factors improve or impair the quality of outcomes; and
- that there are strategies for quality assurance at the system level (and arguably also at a departmental level) which could include external audits of quality of teaching processes in classrooms, and the external scrutiny of quality control arrangements of institutions.

In terms of the *previous casework* that has been done in the service sector, the literature is quite substantial. Recent work has been done in health care (Badrick, et al, 1995, and Moran and Brightman, 1988); retailing (Sohal and Lu, 1995); local government (Farrell, 1996 and Davison and Grieves, 1996) and construction (Pheng and Ke-Wei, 1996). Quality attributes have also been reviewed in terms of customer services (Hall, 1997); financial services (Knights and McCabe, 1996); and catering services (Chang, et al, 1997).

With regard to the university sector, recent case studies have considered students (Karapetrovic and Willborn, 1997); educational administration (Galloway, 1998); research (Walker, 1997); and teaching (McAlevey et al, 1995). Many of the above cases were single-site cases from which generalizations were drawn. The author considered it relevant, therefore, to conduct a single-site case study in the university environment.

Finally, in terms of the availability of *source materials and interview respondents*, the author found an abundance of publicly available material relating to the case in focus, from which much needed key performance data could be extracted. The university department that is studied in this case published six detailed yearbooks during the period under review, and much information has been extracted from those primary sources. The author, who was a senior member of the department during the period, also interviewed a large majority of staff in the department, and conducted unstructured interviews with students in annual 'student forums' to get a perception of some of the reasons behind the performance numbers highlighted in the paper. A limited amount of unpublished information was also used with regards to the department's *Business Center*, but the figures were suitably modified to be indicative rather than specific. The university within which the department operated, also publishes much of the information provided in the case, especially with regards to student numbers and research output, therefore, much of the data in the departmental yearbooks was easily verifiable.

THE POST-MERGER ENVIRONMENT

The School of Accounting at Chisholm was placed in an unenviable position at the time of the merger between Monash and Chisholm by being ranked at near the bottom of the Matthew's table in terms of research output (see Figure 1) and had been criticized for the lack of teaching innovation and also for having academic staff whose experience profiles indicated an "aging' staff (DEET Vol 3, p. 342). With regard to the School of Accounting at the Chisholm Institute of Technology (CIT) the Matthew's Report concluded as follows:

> *.".. the prolonged disagreement with CIT management over the appointment of a Head of School and a Principal Lecturer in Accounting has had a detrimental effect on the staff. It has exacerbated a resistance to change in an aging staff, and made more difficult the task of encouraging and enabling them to move from their traditional base of teaching into consulting and research. The resistance, which has developed among the staff, will make it difficult to negotiate the rationalization of accounting education within the amalgamated Monash University. CIT management has a strong incentive to resolve the problem by making the necessary appointments without further delay. The accounting staff would do well to recognize that their claims to excellence in teaching were not supported by the Panel's research, and that active participation in consulting and research is a reasonable expectation of higher education in Australia." (DEET, 1990, Vol. 3, p. 344 -345).*

FIGURE 1
COMPARATIVE RESEARCH PERFORMANCE

	Accounting Staff		**Other Staff**		**All Staff**	
Publications Index	Chisholm	Med. Inst.	Chisholm	Med. Inst.	Chisholm	Med. Inst.
Refereed Articles and Papers	0.02	0.10	0.05	0.15	0.04	0.13
Other Publications	1.17	0.78	1.22	1.26	1.45	1.22

Source: DEET (1990), Vol. 3, p. 337.

The School of Accounting had however one strength: it had achieved reasonable success in marketing its undergraduate degree, the Bachelor of Business (Accounting), to overseas students. The David Syme name, the popularity of accountancy studies amongst South-East Asian students, and lack of competition from more established Universities at that time, were all seen as contributing factors to the ability of the School in attracting *Full-Fee Paying Overseas Students (FFPOS)*[1]. This had generated significant foreign-sourced income for the David Syme Faculty. The Dean of the Faculty at the time had an enlightened approach to the distribution of the surplus funds - they were given to department that originally earned the funds - thus the School of Accounting had accumulated large cash reserves.

The existence of these cash reserves enabled the Dean to obtain the needed resources to embark on a change management strategy with the broad objective of re-engineering the department to be more closely aligned to an Accounting department of a traditional University such as Monash. A new Head of Department was appointed, the incumbent coming from a very traditional University department. This individual also was given the position of *Professor*, the first such appointment in the School.

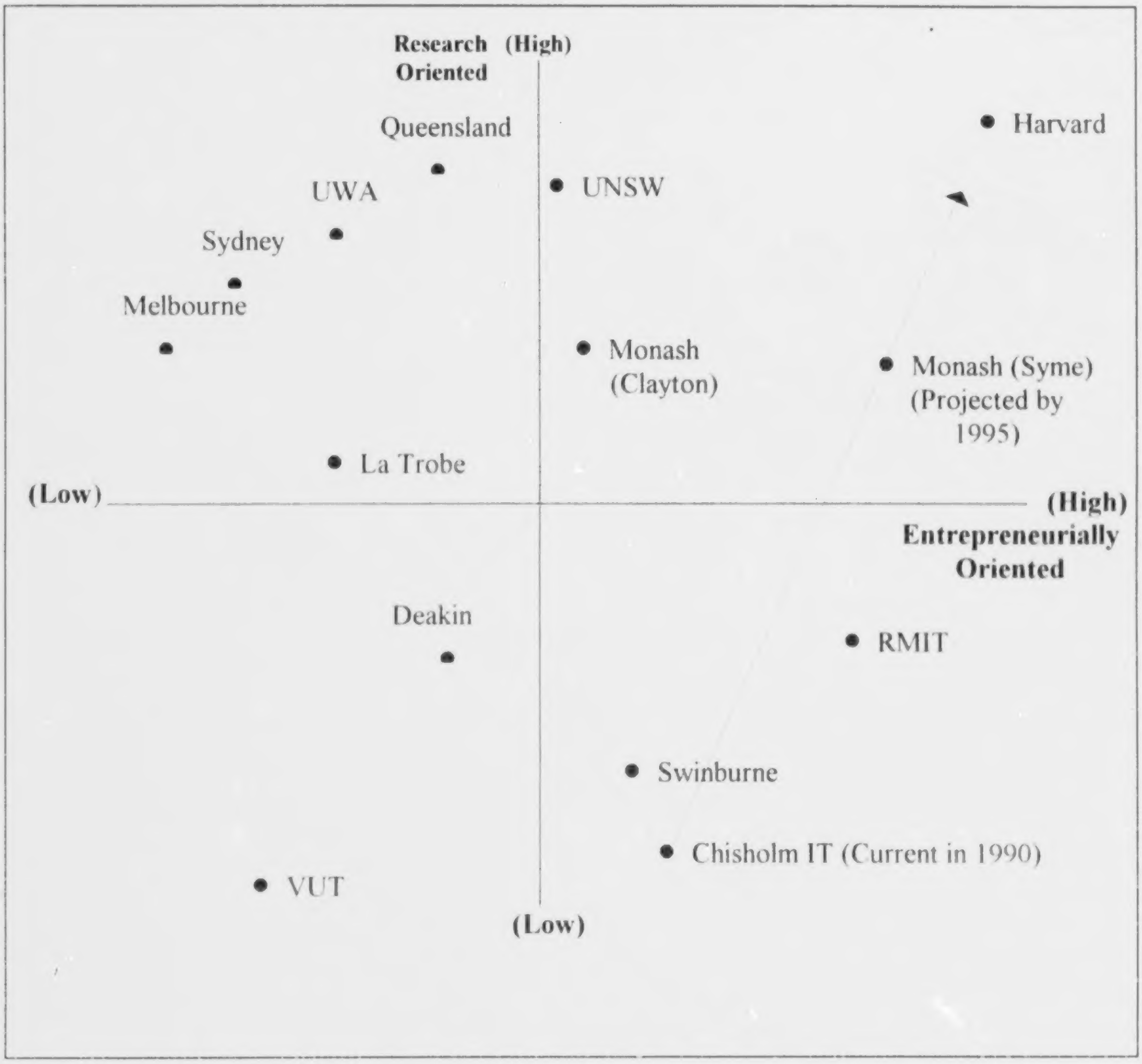
The official merger date between Monash and Chisholm was July 1, 1990. The new Head of the School of Accounting, who took up his position in August 1990, found the post-merger environment of the School included the following factors:

- It had only one undergraduate single-degree and one undergraduate double-degree with computing.
- It had no Honors, Masters or Doctorate programs.
- Only one publication had been achieved
- by the academic staff in 1990, although two senior staff had written popular
- text-books in previous years. No refereed academic papers had ever been written
- by any staff member. Most journal articles had been only in professional accounting journals.
- No academic (excepting for the newly appointed Head) had a doctorate in accounting.

COMPETITIVE POSITIONING DIRECTIONS

In the period from July 1990 to December 1991, certain strategic changes were implemented, much of the initiatives aimed at overcoming the weaknesses of the Syme School as reported in the Matthew's Committee Report (DEET, 1990, Vol 3, pp. 335-345). For example, a mission statement was developed, a policy of only hiring staff with doctorates to senior positions was implemented, staff over the age of 60 were offered a very generous retirement package, and a graduate program including two Masters degrees was introduced. It was seen at that time that a definite pattern was emerging in terms of the School's competitive positioning. This change in positioning is best mapped via *perceptual mapping* techniques as illustrated in Figure 2.

FIGURE 2
PERCEPTIONS IN COMPETITIVE POSITIONING (ACCOUNTING DEPARTMENTS)



The perceptual map depicted in Figure 2 shows the relative positions of various competitor institutions in terms of research versus entrepreneurship.[2] It is a composite of the views of the School staff (when they were part of Chisholm) as recorded in the Matthew's Committee report (DEET, 1990, Vol 3, p. 342); its research record at the time, and the perceptions of the Syme School's *Strategy Advisory Board* with regards some of the competitor institutions. The Strategy Advisory Board consisted of individuals holding senior positions in industry and the profession and also senior academics from within the Syme School. The "map" is based on internal views regarding external perceptions, and thus the relative placements of the various institutions are extremely subjective and must be interpreted with caution. The map was, however, useful in showing the strategic direction in which the former Chisholm School desired to move as the re-engineered (and re-named) Syme School of Accounting within Monash University.

It can be seen that the Strategy Advisory Board considered Harvard University as the "ideal" model - *strong in research and strong in entrepreneurship*. It regarded Queensland University and the University of NSW as being very strong in research. It regarded the Syme School as one of the most teaching-oriented and entrepreneurial amongst academic institutions in Australia, second only to the Royal Melbourne Institute of Technology (RMIT). The objective therefore, was to move the Syme School in *both* directions (towards the Harvard ideal), but more in the research direction as there was more ground to catch-up with regards to research.

A 'Research and Development Strategic Plan' was therefore published, covering the following key areas:

- Reduction of Teaching Loads
- Encouragement of Training and Development
- Introduction of Applied Research Seminars
- Networking amongst Researchers
- Integration of Research with Teaching
- Encouragement of Teamwork
- Creation of Publication Outlets

The strategic plan and its implementation was considered extremely innovative in terms of the thinking within the Australian university sector at that time, and was reported as such in a key article in the Business Press (Boreham, 1992). Later in this paper, it will be discussed if these strategic objectives were met and if the desired outcomes were achieved.

THE INTERNATIONALIZED UNIVERSITY

In 1992, the Vice-Chancellor of Monash University announced the university-strategy of the internationalization of its programs, with the bold public-slogan of positioning the university as "*Australia's International University*."

The University appointed a Pro-Vice Chancellor (International) to take the responsibility of its off-shore and *Full Fee Paying Overseas Student (FFPOS)* programs. A framework was developed to ensure that the university was presented in the best possible light in its international markets. An *Overseas Programs Sub-Committee* was also set-up with the Vice-Chancellor chairing. This resulted, subsequently, in the establishment of a corporate entity called *Monash International* to market and administer all of the University's international activities.

This very clear strategic direction articulated by the chief executive of the university was of considerable strategic significance to the Syme School of Accounting. It was one of the first departments to embrace the strategic directions expected of an 'International University', by embarking on a number of initiatives designed both to bring international students to Monash, as well as take its programs overseas.

The challenge was to take the department's programs overseas, earn an adequate return, but still ensure that there was no loss of quality vis-a-vis the local (Melbourne-based) programs. There were also significant risks involved: for example, the availability of programs off-shore could have a serious negative impact on students coming to undertake the programs in Australia. Also the joint-venture partners had to be carefully selected and the cost of off-shore delivery had to be carefully controlled so as not to price the programs beyond the reach of their intended markets.

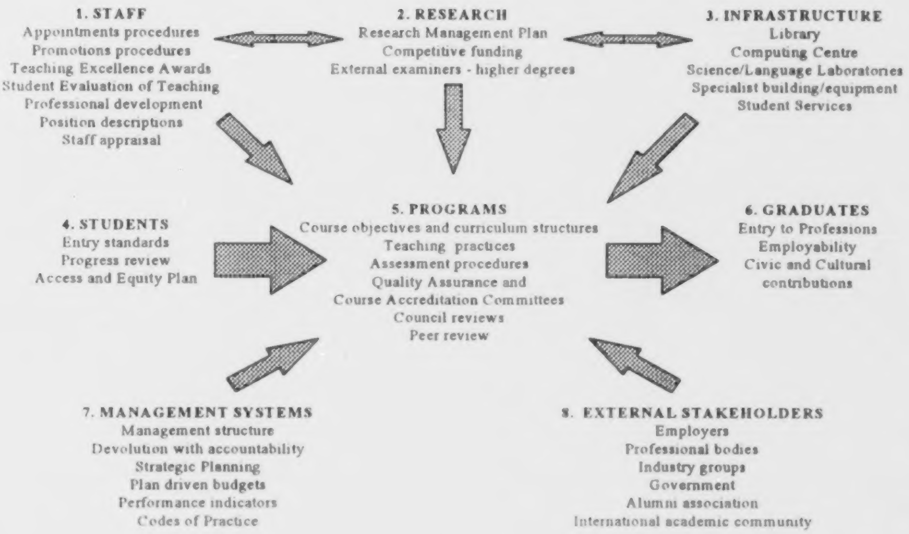
Quality issues were, therefore, paramount in the "venturing offshore" deliberations in 1992. There was the *Code of Practice* issued by the Australian Vice-Chancellors Committee in terms of maintaining and monitoring academic quality and standards in higher degrees (AVCC, 1990). There was also the then recently published report on achieving quality in higher education (Higher Education Council, 1992). This latter report was expected to result in a "quality-audit" of academic institutions, in a subsequent period (and did eventuate from 1995 onwards).

THE QUALITY MANAGEMENT PROGRAM

The Syme School of Accounting met the challenges of the Internationalized University by developing a comprehensive 'Quality Management Program'. It structured this program using the framework recommended in the Higher Education Council (1992) report (see Figure 3).

FIGURE 3

QUALITY ASSURANCE IN EDUCATION PROGRAMS


1. STAFF
Appointments procedures
Promotions procedures
Teaching Excellence Awards
Student Evaluation of Teaching
Professional development
Position descriptions
Staff appraisal
2. RESEARCH
Research Management Plan
Competitive funding
External examiners - higher degrees
3. INFRASTRUCTURE
Library
Computing Centre
Science/Language Laboratories
Specialist building/equipment
Student Services
4. STUDENTS
Entry standards
Progress review
Access and Equity Plan
5. PROGRAMS
Course objectives and curriculum structures
Teaching practices
Assessment procedures
Quality Assurance and
Course Accreditation Committees
Council reviews
Peer review
6. GRADUATES
Entry to Professions
Employability
Civic and Cultural
contributions
7. MANAGEMENT SYSTEMS
Management structure
Devolution with accountability
Strategic Planning
Plan driven budgets
Performance indicators
Codes of Practice
8. EXTERNAL STAKEHOLDERS
Employers
Professional bodies
Industry groups
Government
Alumni association
International academic community

Source: Higher Education Council (1992)

The Syme Accounting *Quality Management Program* was designed in early 1992 around five component areas as follows:

- Quality of Inputs including student demand, cut-off scores, staff qualifications, teacher training and research opportunities.
- Quality of Programs including curriculums, progression rates and grade dispersions
- Quality of Outputs including graduate employment rates, post-qualifying professional examination success rates and research publication success.
- Internal Quality Control including student forums, course documentation and cross-campus subject rationalization.
- External Quality Control including the appointment of adjunct professors and course advisory boards.

INPUT QUALITY FACTORS

The *inputs* recognized in the Department's 'Quality Management Program' followed from items 1, 2, 3 and 4 of Figure 3, namely *staff, research management*, *infrastructure* and *students*. The objective was to attract the highest calibre of staff and students to the department via teaching and research programs that were being seen as relevant to the marketplace and the provision of up-to-date infrastructure facilities.

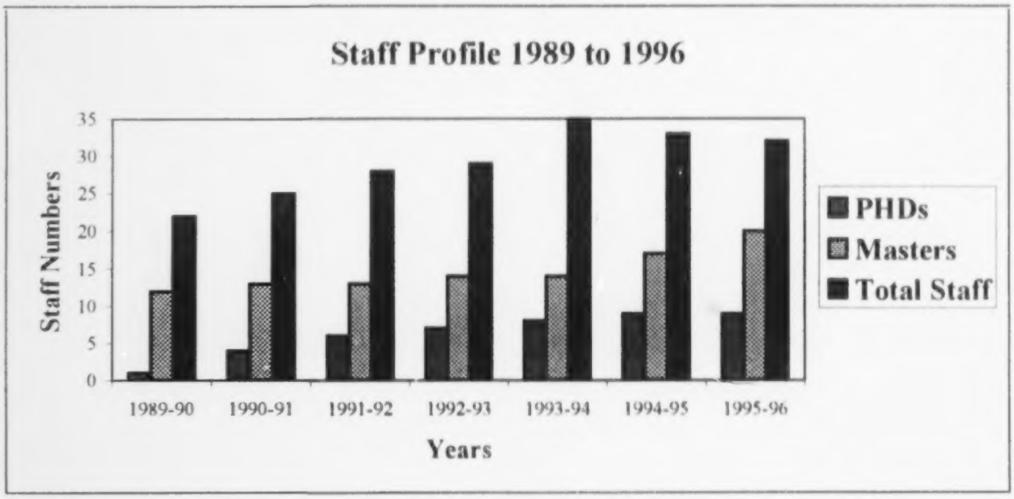
It was believed that good *staff* could be attracted by providing *research* opportunities and funding, and also by providing challenging teaching programs. Salary loadings were also considered important to obtaining the right staff. The Research and Development Strategic Plan outlined earlier was designed to provide such a research environment. The post-graduate and the graduate-conversion programs introduced in 1991 were seen as providing a challenging teaching environment, with also the likelihood of *over-award payments* for staff teaching in these programs.

Position descriptions for all levels of staff were developed as part of the 'Quality Management Program' in 1992. The strategy of appointing staff with doctorates to senior lecturing (and above) positions has already been discussed. However, along with this fairly stringent 'new appointments' procedure, was also an 'internal promotions procedure' developed to recognize the efforts of the more teaching oriented staff. In 1991 the first internal promotion since 1986 took place (from Lecturer to Senior Lecturer). By 1996 ten staff had been internally promoted through various ranks.

The combination of the above factors had a dramatic impact on the staff profile of the School (Figure 4), and also on its research output (Figure 9).

Figure 4 indicates that there was a gradual increase in 'Total Equivalent Full-time (EFT) Academic Staff' during the period 1990 to 1994. More importantly, the percentage of staff with higher degree qualifications increased significantly, especially those with *doctorates*. This rapid increase in highly qualified staff resulted in the Syme School having one of the highest concentrations of PhD's amongst Australian Universities, a significant benchmark.

FIGURE 4
CHANGES IN THE FULL-TIME ACADEMIC STAFF PROFILE



As part of the input quality strategy, the *infrastructure* of both the Faculty and the School was upgraded in line with most modern universities during the 1991-92 period. Students in the School of Accounting, as part of the Faculty of Business, were provided access to nine networked laboratories of microcomputers.

Staff of the School were also extremely well served as far as computing facilities were concerned. Each staff member had a microcomputer on his/her desk all of which were networked via file-server to all the other staff in both the School and the Faculty. The network was also linked via the Computer Center to all Monash Campuses, thus enabling staff to communicate directly using the email facility on the network with all colleagues on all campuses.

Library facilities were made available to students, for extended hours, during the week and at weekends. The Syme School also established a *Resource Center* of academic journals and other professional materials for the use of the academic staff members.

The School was also an innovator in the Faculty as regards to *Objective Testing*, having purchased a card reading scanner and developed a test bank of multiple choice questions in accounting in 1992. The School had also purchased sophisticated typesetting equipment for the purpose of publishing academic reports and text books, and in fact carried out typesetting work for Commercial Book Publishers, via its *Business Center* (that was established to run the School's commercial activities such as its overseas degree programs and in-house training programs; and undertaking commissioned research, consultancy and publishing activities).

All of the above were considered 'state-of-the-art' in terms of infrastructure in 1992, and were made possible mainly due to the surplus funds generated via the School's international activities.

The quality of *student* inputs also improved dramatically after the merger of the Chisholm Institute of Technology with Monash University. As illustrated in Figure 5, in terms of entry standards, the undergraduate cut-off score for the Syme School moved from a lower-end 75% on the old Victoria Certificate of Education (VCE) scale to a respectable 78% in 1990-91, and a high-end 80.5% in 1991-92. In 1992-93 the VCE scales were changed and the cut-off scores for the Syme School was equivalent to 86% on the new scale (being the second most difficult course to get into in the State). This relative ranking was maintained in 1993-94.

The scales changed again in 1995, with the new Tertiary Entrance Requirement (TER) scores being used instead of the earlier VCE scores. The scale was up to maximum of 100. The Syme School's score had a percentage drop to 80% in 1994-95 and in 1995-96 three of its competitors recorded higher cut-off scores.

The general view of the respondents interviewed as the possible reasons for the dramatic increase in cut-off scores up to the 1994 intake was that the Monash name had a significant impact on students when they selected their preferences. Another factor considered important was that the Syme's School's heavy promotional campaign's via the distribution of Yearbooks and course brochures at the secondary schools; the use of its academics to visit these schools and talk of accountancy studies within a business degree; and also the giving of free 'Common Assessment Tasks' (CATS) lectures had a dramatic impact in terms of marketplace exposure and demand creation. Conversely, the respondents felt that the slight deterioration in cut-off scores, from 1995 onwards was due to a Faculty decision to both lower the expenditure on media campaigns and also to market accountancy studies as a generic product within the Faculty, rather than as differentiated specializations available within a Business, Commerce or Economic degree.

FIGURE 5
ENTRY SCORES AND STUDENT-STAFF RATIOS

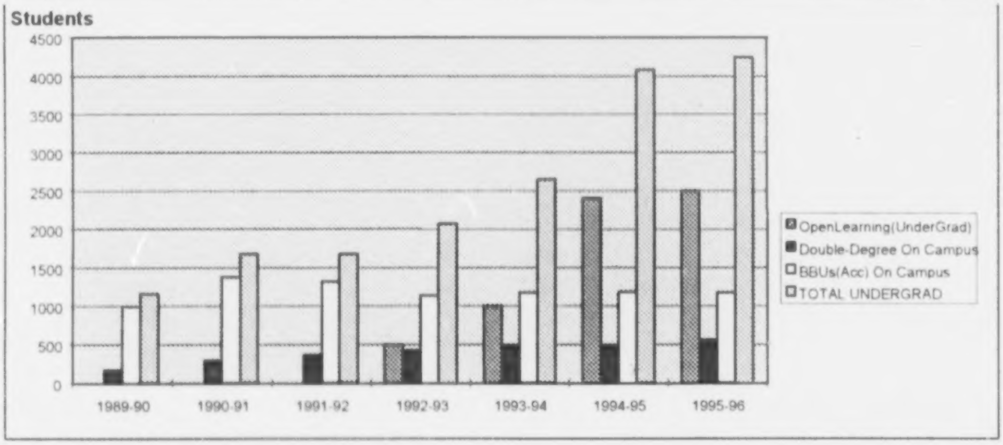
	1989-90	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**
Undergrad Cut-Off Point	75%	78%	80.5%	86%	86%	80%	79.5%
OnCampusStud/FT Staff Ratio	52.8	67.2	60.0	52.6	46.2	49.5	53.0
OpLearnStudent/FTStaffRatio	0	0	0	17.2	28.6	72.7	78.1
GradStudent/FTStaff Ratio	2.3	4.2	10.1	12.2	12.9	24.4	25.8
TotalStudent/FTStaffRatio	55.0	71.3	70.2	83.4	88.8	147.9	158.3

Sources: DEET (190) and Syme School of Accounting Yearbooks

It must be noted that the percentage of undergraduate on-campus students moved over the years from being 100 percent of total students in 1989-90, down to 60 per cent by 1992-93; and down again to 34 per cent by 1995-97, giving way to student in the graduate studies and open learning programs (see Figures 6 & 7). The cut-off scores discussed above pertain only to the undergraduate students. In terms of *Access and Equity* to the Syme School' programs, however, almost 50 per cent of its total student in 1995-96 were undertaking the Bachelor of Business Studies (BBusStud) program via the *Open Learning Project*, which allowed open-entry - in which no previous studies were necessarily required (see Figure 6). The Open Learning project was financed by the Federal Government, and included some subjects taught via a Government sponsored television channel. Also, another 16 per cent were post-graduate students (see Figure 7). The Syme School also had innovative access and equity plans even in terms of the post-graduate degree programs in that entry modes were made available to individuals with professional accounting qualifications and/or senior accounting positions who may not have had a first degree.

This dramatic increase in student numbers via the School's Open Learning project and the introduction of its Graduate Program had a similarly dramatic impact on its *student-staff ratios*. In terms of its full-time academic staff, the ratio increased from 55 students per full-time academic staff member in 1989-90 to 158 students in 1995-96 (see Figure 5)[3]. While many (especially professional bodies) were concerned with these high student-staff ratios as there was a fear that quality might be affected, most of the staff viewed the increase in the ratio as an indicator of increasing *productivity*. As these productivity increases were compensated by the payment of over-award remuneration, staff motivation was very high during this period.

FIGURE 6
CHANGES IN THE UNDERGRADUATE STUDENT PROFILE



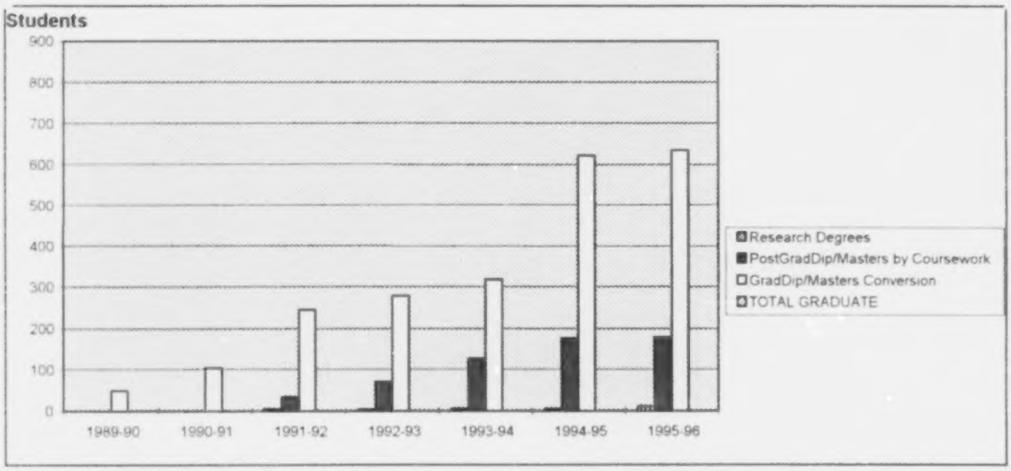
PROGRAM QUALITY FACTORS

The factors considered important in maintaining and enhancing the quality of the Syme School's research and teaching ***programs*** stemmed from the *processes* that were established in its 'Quality Management Program' pertaining to *scholarship, relevance* and *articulation* opportunities. These factors follow from item 5 of Figure 3.

In terms of *scholarship*, continuous improvement in quality levels were aimed for via well designed and clearly articulated *course objectives* and *curriculum structures*. The BBus (Acc) degree and its related double-degrees were redesigned in 1991, especially incorporating a capstone unit, *Strategic Management Accounting*, which involved students undertaking a seven-week industry based project.

The flexible *teaching practices* implemented in the Research and Development Strategic Plan (in order to lower teaching loads and provide concentrated research timeblocks) were also instrumental in maintaining program quality. This was especially so as the Syme School got more and more involved in international teaching programs. Teaching loads were reduced from 14 hours per week to approximately 6-8 hours by 1996. Modular and team-teaching practices enabled staff to be time-tabled at different locations for specialist teaching programs, rather than be at one location over a 13-week semester period. This not only improved the staff-movement logistics, but also program quality, as the same lecturer was able to deliver his or her lecture at whatever location where that specialized syllabus was being taught. While team teaching was used in both undergraduate and post graduate programs, modular teaching was mostly used in the latter programs, as these were the programs that the Syme School taught intensively overseas, i.e. in Singapore and Hong Kong (in which the School taught its masters degree programs fully offshore).

FIGURE 7
CHANGES IN THE GRADUATE STUDENT PROFILE



Amongst the different teaching practices introduced as part of the Quality Management Program was the *'Accounting Information Techniques (AIT)'* subject, which was spread across all of the mainstream accounting subjects running in the second-year of the 3-year undergraduate degree program. This subject aimed to inculcate good communication skills (e. g report writing; correspondence; oral presentation etc.) as a part of the technical expertise required by accounting graduates. For example, in the 'cost accounting subject', an evaluation of an investment proposal had to be presented as a proper management report by all students. The program was singled out by the *Business Review Weekly* magazine "as one of the most innovative" in undergraduate business education in Australia (Boreham, 1993).

Innovative *assessment procedures* were also incorporated into the program quality area. For example, in the AIT subject described above, there were four pieces of communication-based assessment spread over four accounting subjects; and each assessment component had to be passed in order to pass each related accounting unit. Students were, however, given three attempts to pass each of required AIT components.

Another innovation in the assessment area was the use of *objective testing* in the very large first-year accounting unit (over 1,000 students per semester). American-style "Test Banks" of multiple-choice questions were developed and successfully used as a part of the assessment criteria. Differing assessment procedures for the Masters programs were also developed, including open-book examinations and marks for class participation, and the assessment of presentations as a group.

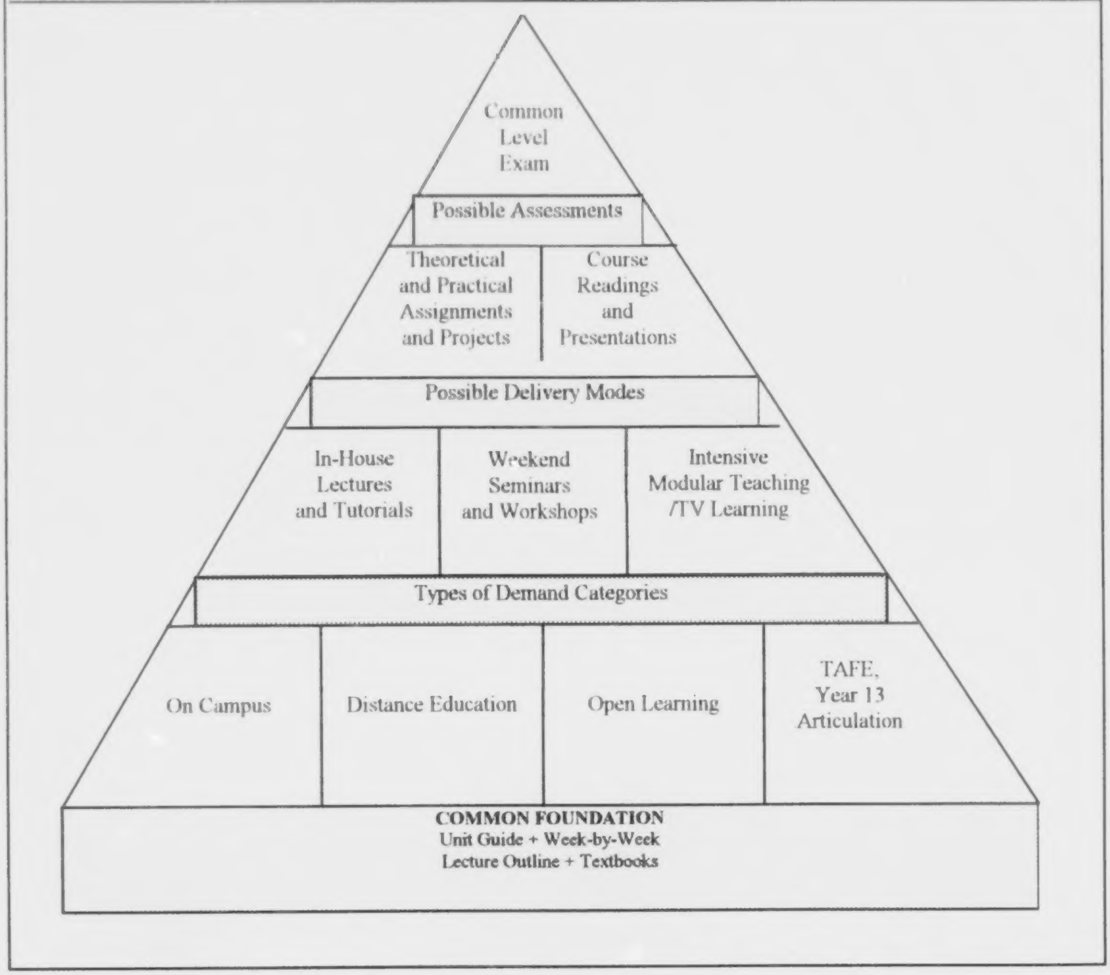
Many of the programs of the Syme School were delivered in multiple *locations* (e.g Melbourne, Sydney, Singapore, Hong Kong and via correspondence and television); to varying categories *students,* e. g on campus, distance education, open learning, Technical and Further Education (TAFE), Year 13 articulation (i.e. an extra year studying university subjects in school), and overseas twinning; and using differing teaching *modes* (e.g. in-house lectures and tutorials, weekend seminars and workshop, intensive modular teaching and TV learning). The danger of offering the same program in such diverse demand categories and delivery modes was that there could be a loss of quality, which in turn would affect students as learners and dampen their enthusiasm. This possibility became more acute as one ventured internationally. Therefore, in implementing its Quality Management Program, the Syme School was acutely aware that it needed to maintain the same program quality levels in all of its multi-national locations. The School succeeded in providing this *Quality Assurance* by grounding their differing programs on what they termed as their *quality benchmarks*, i.e. common entrance criteria, common syllabus coverage and common examinations (see Figure 8).

Figure 8 illustrates how program quality was maintained by ensuring that each subject offered by the Syme School was built on a strong 'common' foundation of a unit guide, week-by-week lecture outline, and core textbooks. In the Graduate program, this common foundation included comprehensive 'course modules' consisting of all the required lecture notes, journal article readings, case studies and discussion questions. From such a foundation, 'differentiation' was achieved based on students' demand categories; possible delivery modes and possible continuous assessment choices. This common foundation and differing building-block approach all led to a common level exam.

The 'common' aspects of the subjects ensure not only the quality, but also the recognition of the subjects across multi-national boundaries. The 'differentiations' ensure that the advantages of flexibility exist for both students and academic staff in terms of program accessibility, marketability, delivery logistics and assessment.

FIGURE 8

MULTI-NATIONAL QUALITY ASSURANCE


Common Level Exam
Possible Assessments
Theoretical and Practical Assignments and Projects
Course Readings and Presentations
Possible Delivery Modes
In-House Lectures and Tutorials
Weekend Seminars and Workshops
Intensive Modular Teaching /TV Learning
Types of Demand Categories
On Campus
Distance Education
Open Learning
TAFE, Year 13 Articulation
COMMON FOUNDATION
Unit Guide + Week-by-Week Lecture Outline + Textbooks

BEST COPY AVAILABLE

All of the programs of the Syme School were subjected to various accreditation and review processes. Its *Course Accreditation Committee*[4] consisting of a number of practitioners from industry and the profession who met regularly to overview curriculum developments in terms of relevance and professional requirements. *Student Forums* were also established, and a Visiting Professor from the USA was appointed in 1995 to conduct a *Peer Review* of the department. A number of students were interviewed in conducting this review. A *Council Review* was undertaken via its University Quality Review Panel, which reported many of the innovative approaches to education of the Syme School. The Monash Quality Portfolio (1993) stated specifically that:

> *"The BBus (Acc) course in one of the most industry relevant, and the most assessable degree programs available to students"*

It can be seen, therefore, that by the end of 1992, the Syme School had implemented a sequence of teaching and research programs designed to ensure scholarship, relevance and articulation opportunities. The degree programs not only provided both breath and depth, but also significant differentiations. This quality assurance program was maintained via various common features, and most importantly via market acceptance of its many programs.

OUTPUT QUALITY FACTORS

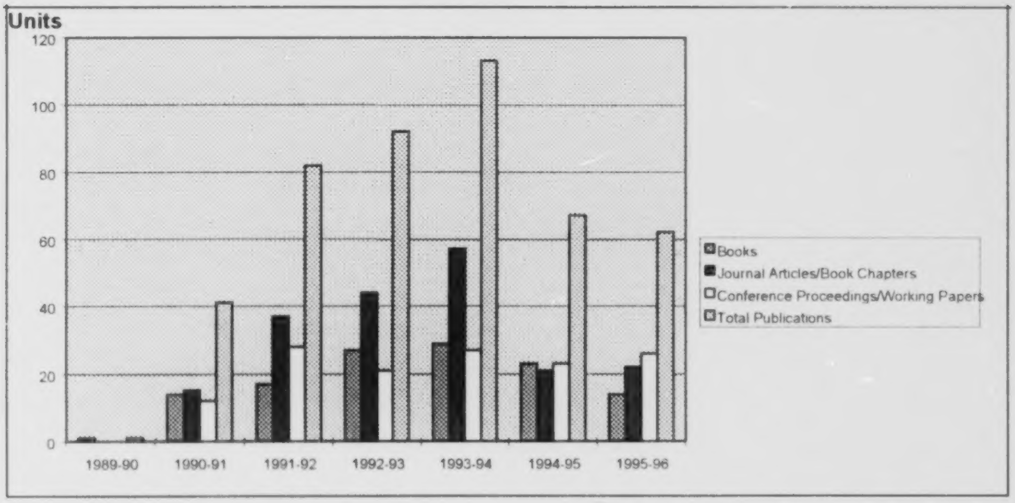
The ***outputs*** recognized by 'Quality Management Program' included student employment rates, professional examination success of graduates, and most importantly, the research success of the Syme School. In terms of the Higher Education Council (1992) Framework (Figure 3), this area measured the outcomes of item 6 (Graduates) and part of item 2 (Research).

The *employability* of graduates was not directly measured by the Syme School. Instead it relied on University surveys conducted on an annual basis, which indicated that over the 1991-1996 period its graduates were achieving close to full-employment rates within 6 months of graduation, at starting salaries well above the average of the higher education sector as a whole in terms of accounting.[5]

In terms of professional examination success of Syme School's graduates, the only measures available were those released to universities by the Institute of Chartered Accountants of Australia (ICAA). The output measures of the ICAA's *Professional Year (PY)* examination were tracked carefully by the School, and over the period 1991-96 its graduates obtained significant gains in terms of pass-rates in most subjects, and in some cases gains of more than 30 per cent over a year. Although these results cannot be published as they are provided to universities on a confidential basis, there was evidence that the significant improvements with regards to the School's student inputs and program quality, were having the desired impact in terms of graduate performance outputs.

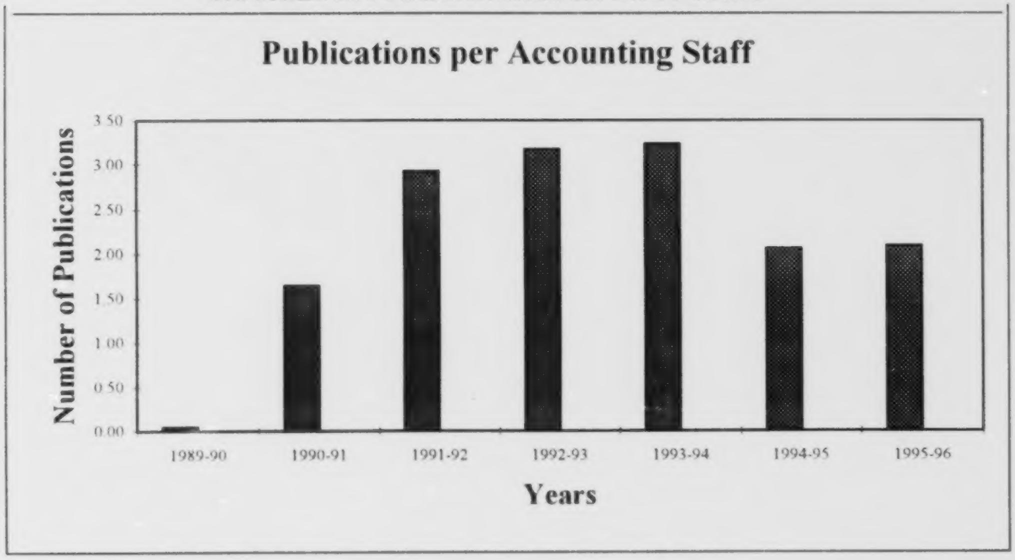
In terms of *research* output Figure 9 indicates that the implementation of the Syme School's *Research and Development Strategic Plan* had a dramatic impact on its success measures. In terms of publications, significant gains were achieved till the 1993-94 period, especially in terms of *books* and *journal articles*, with a leveling of at that high achievement level from that point. Although some of the output in books was the result the internally published 'Framework Series' (which was launched to encourage academic staff who had not published before to initiate their publishing career by upgrading their course notes into commercially-oriented texts), most of the Australian commercial publishers were also well represented in the output figures. The 'Publications to Academic Staff Ratio' increased from a paltry .05 in 1989-90, to 3.23 in 1993-94, before settling at approximately 2 publications per staff member in the subsequent years (see Figure 10). The School also sponsored three refereed publications during this period: the *Australian Accounting Review*; the *Accounting Research Journal* and *Small Enterprise Research*.

FIGURE 9
CHANGES IN RESEARCH OUTPUT



The staff were also very active in the *research seminars* and *conference proceedings* area during the period. A policy of fully-funding all conferences at which a paper was accepted, had the expected result of staff targeting a number of international conferences as well as those interstate. From a zero start in 1989-90, dramatic increases were achieved in 1991 and in 1992, and such activity stabilizing to approx. 60 - 70 conference presentations a year by 1996. In 1991-92, the Syme School was awarded three *Australian Research Council (ARC)* small grants, a feat that many larger and more established research oriented accounting departments had not been able to achieve. This achievement was repeated in 1992-93. Unfortunately the School has not been able to secure an ARC grant since.

FIGURE 10
CHANGES IN PUBLICATIONS PER STAFF RATIO



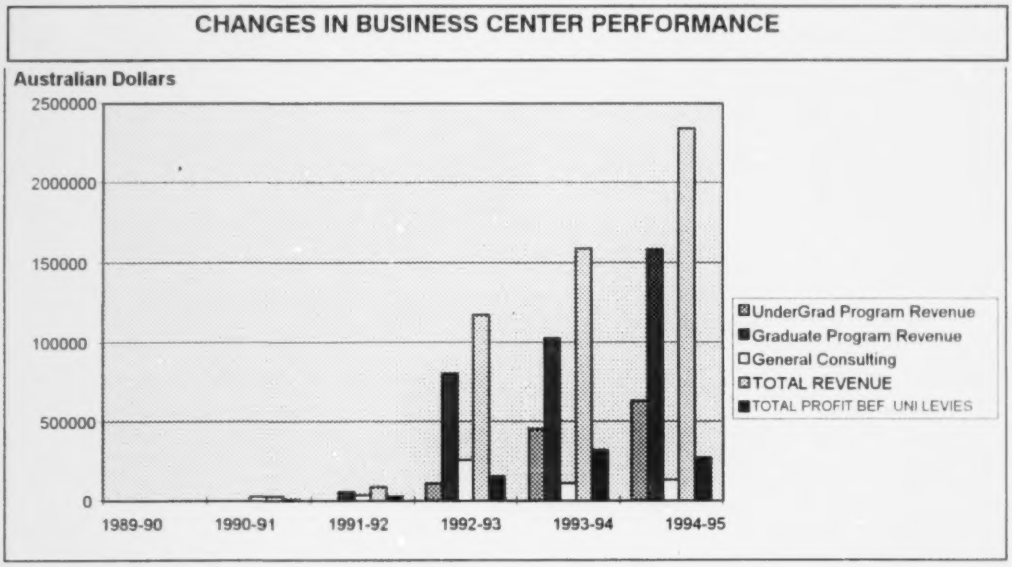
INTERNAL QUALITY CONTROL

This area of the 'Quality Management Program' covers essentially item 7 (Management Systems) and part of item 1 (Staff) of the Higher Education Council (1992) Framework (Figure 3), and deals with management structure, accountability, strategic planning, budgets and performance indicators.

The Syme School's *management structure* was changed radically in 1991, to depict a more corporate approach to teaching, research and entrepreneurship. A School Executive was formed, with senior staff members given the title, responsibility and accountability of directors. The *Director of Research* was responsible for the School's research plan and overall research performance, while the *Director of Academic Development* was responsible for culture-change management within which largely teaching-oriented staff were encouraged and facilitated to undertake research. The *Director of International Programs* was responsible for the global thrust of the School, which also included the organization of an Overseas Study Tour and a Distinguished Visitor Series in conjunction with the Australian Society of CPAs. *Course Directors* were appointed with overall responsibility for their relevant degree programs and associated student forums, and a *Director of Logistics* was appointed to ensure the smooth running of the School in terms of its multiple teaching venues.

In terms of *strategic planning* and *budgeting* a Strategy Advisory Board was established in 1992, with senior individuals from the profession, industry and the wider-university as external members. A strategic plan was developed by this Board each year during the period 1993 to 1995, and post-implementation results were also closely monitored. The School's budgets were submitted to the Strategy Advisory Board and also to an External Board established at the Faculty level. By 1995 the Syme School's turnover amounted to well over 4 million dollars, with approximately $2 million revenues generated by its Business Center which had overall responsibility for the fee-paying degree programs of the School and its commercial publications. The activities of the School and its Business Center were significantly profitable, so much so that in 1993 it obtained permission from Monash University to invest over 1 million dollars in commercial property. In 1995, the *operating profit before university levies* amounted to A$275,000 (Figure 11) on a total revenue of A$2.3 million. In 1996, the Business Center was closed due to Faculty restructuring needs, and its staff and activities (as well as its financials) were merged with those of the Syme School.

FIGURE 11


CHANGES IN BUSINESS CENTER PERFORMANCE

In addition to the budget and the reporting of actual performance results and variances, the Strategy Advisory Board was also provided with the School's *key non-financial performance indicators*, many of which have been incorporated into the analyses shown in Figures 4 to 11.

The challenge to the department in terms of internal quality control was to ensure that there were adequate checks and balances within its control systems to ensure that its entrepreneurial activities were not at the expense of its teaching quality and research output. Therefore, to maintain the research thrust of the department, the profits from the fee generating award programs which were run by the Syme School's Business Center, were earmarked for providing both internally generated competitive research funding, and also 'salary loadings' of up to 25% of base salary for good performance in the research publications area. Further incentives for staff were provided by increasing the available word processing staff and also appointing full-time research assistants. Graduate assistants were also appointed from amongst the Honors students.

To ensure that staff had a 'balanced work load,' a *staff appraisal* system was formalized in 1992. Due to Staff Union requirements however, this was referred to as a "Staff Commitments Plan." Staff were expected to commit to, on a semester-by-semester basis, their responsibilities in teaching, research, administration, consultancies/training and other areas. Together, all of these responsibilities were expressed in terms of "equivalent teaching hours" after discussions on an one-to-one basis with the Head of Department. Each staff member was expected to commit to a minimum of 14 equivalent teaching hours. Those exceeding this minimum were rewarded via salary supplementation (up to a maximum of 25% of base salary) which was again calculated on a equivalent teaching hour basis.

Student evaluation of teaching was also formalized in 1992 with an administrative staff member appointed to ensure strict controls in the administering of the questionnaires. Again, due to Staff Union requirements, these teaching assessments were provided only to the staff member responsible for the teaching, rather than to the Head of School. The university also created a 'Teaching Excellence Awards' in 1992, and a staff member of the Syme School was the recipient of Monash University's initial award for excellence in first-year undergraduate teaching. Another staff member was given a "Special Commendation" in 1995, by the Vice-Chancellor, for Distinguished Teaching Excellence.

EXTERNAL QUALITY CONTROL

This final area of the 'Quality Management Program' essentially covers item 8 (external stakeholders) in the Higher Education Council (1992) Framework (Figure 3).

The establishment by the Syme School of a 'Strategy Advisory Board' was discussed in the previous section. In addition to this, a 'Course Advisory Board' was also established to monitor the curriculum of the School's degree offerings in terms of its external stakeholders. Members of these two advisory bodies were drawn from professional organizations, industry groups, the government, and other tertiary institutions. The aim of the Course Advisory Board was ultimately to make the Monash (Syme) graduate more *relevant* to employers.

Two 'Adjunct Professors' were appointed to the department to further provide external quality control. These were two of the most senior and respected accounting academics in Australia. Regular visits were made by these two professors with the express responsibility of reviewing research protocols and the teaching materials of the Syme School.

External quality control was also provided by regular visits from the international academic community. The Syme School had over 15 visiting academics every year during the period 1991 to 1996. It also had the week long visit of its Distinguished Visitor, and in 1995 had two visiting professors who spent their sabbaticals at the School. One of these professors conducted a comprehensive *quality audit* of the School in terms of all its degree programs and research benchmarks in 1995.

SUMMARY

This paper presents an in-depth case study of a university department that was subject not only to the pressures present as institutions of different research and teaching orientations are merged, but also to the pressures of maintaining program quality and research focus in an increasingly entrepreneurial and globalized environment.

This case is of particular interest to educators who are coping with the above issues of 'balance', and to those interested in seeing how a department implemented a comprehensive *Quality Management Program* largely in keeping with the Framework provided by the Higher Education Council (1992). *Key Performance Indicators* are provided for the period, and it can be seen that the department was largely successful in climbing from a position of significant under-achievement amongst its peers in 1990, to one of strength in terms of both research performance and entrepreneurship by 1994.

Many *contemporary issues* of a competitive and globalized academic environment are covered in the case. Issues such as over-award payments; salary supplementation; flexible learning; modular teaching; overseas campuses; teaching evaluation; staff assessments; degree articulation; positioning of brand name; teaching loads and a host of other quality assurance factors are addressed in this case. The case provides many useful insights to those universities, faculties and their departments which wish to operate in a globalized environment.

ENDNOTES

1. The Matthew's Committee Report (DEET, Vol 3, p. 340) also states that the cut-off score of the FFPOS students intake in 1989 was 250, 40 points below Chisholm's Institutional cut-off rate due to a "discrepancy."

2. There were perceptual maps' drawn of other variables as well; e.g teaching versus research, etc. However, the research versus entrepreneurship map was considered the most relevant for strategic planning purposes. Also, there was a strong perception that the orientations of teaching and entrepreneurship were strongly correlated.

3. These absolute ratios must be interpreted with caution, as approximately half the undergraduate program was taught by academics in other (non-accounting) departments of the Faculty. However, the magnitude of the relative increases in the ratio is indicative of the increasing pressure on staff due to growth in student numbers.

4. This Committee was in existence in the School prior to Chisholm's merger with Monash.

5. The higher starting salaries statistic must be interpreted with caution, as one possible reason may have been that the Monash (Syme) Graduates were going directly into industry rather than entering the chartered accounting profession which paid relatively lower salaries. This lack of representation in the profession was seen as a relative weakness of the Syme School, and one area that was benchmarked for improvement.

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CHAPTER TWO

TEACHER TRAINING IN CASE STUDY ENCOURAGES INNOVATION: AN ARGUMENT FROM EXAMPLE

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Abstract

Case study of innovative courses is useful for teachers-in-training to undertake in order to learn both course design and classroom research. One example of a case study that fulfilled such purposes is discussed in detail—a case study of a university course revised and implemented by graduate students. Their course enabled ESL composition students to write regular, college-level compositions rather than more typically assigned simpler, shorter compositions. New elements of the course included cooperative learning, portfolio grading, thematic assignment sequencing, and collaborative writing. Adoption of the major course revisions is recommended, with caveats given about the collaborative writing.

INTRODUCTION

Innovation in the college classroom is opposed by many forces, prime ones being limitations on instructors' and administrators' time and resources, conservatism within academic departments and subcultures, and lack of teacher training in new teaching methods. Teacher education, when it is even required for college teachers, often ignores the first two obstacles to innovation and concentrates on the last by exposing teachers-in-training to the latest teaching methods and techniques. Such an approach may be inadequate, and is certainly problematic, as new methods and techniques come in and out of fashion frequently.

A better way to encourage teachers to be innovative may be to train them in strategies of implementing innovations—whatever innovations they might deem appropriate in whatever contexts they might find themselves. Such strategies should include means for conducting research of an evaluative or justificatory nature into the outcomes of innovation, for the teacher's own classroom, department, and/or professional purposes.

Case study methods are very appropriate means of conducting this kind of research, and they can be easily taught to graduate students in teaching fields. According to Yin, case studies are appropriate "when a 'how' or 'why' question is being asked about a contemporary set of events over which [an] investigator has little or no control" [Yin, 1994, p. 9]. These are precisely the sorts of questions a teacher asks when trying to understand how or why an innovative course works (or doesn't)—particularly if the innovations are at all radical. Furthermore, case study promises not only to be appropriate but also do-able, as a "major strength" of the method "is its suitability to small scale investigations of the type often carried out by graduate students and/or classroom practitioners" [Nunan, 1992, p. 88]. Case studies, according to Nunan,

> "are particularly suited to...action-oriented research projects where the purpose is, in the first instance, to help practitioners enhance their understanding of, and solve problems related to, their

> own professional workplace, and where the problem of external validity is less significant than in other types of research." [1992, p. 89]

Nunan describes well the fit between case study methods and the goals of teachers and evaluators of innovative courses. Such teachers are definitely in the position of trying to solve problems in their own workplaces. They need to "enhance their understanding" of whether their solutions seem to work, and of what new problems their innovations might create, and they need to do so efficiently.

Certainly, many experienced teacher researchers already benefit from using case methods to study their own and others' classrooms. It is my contention, however, that case study should be taught more widely to new teachers and teachers-in-training, and that they should be encouraged to engage in case study of courses of their own design.

A teacher-in-training is commonly required to teach from a syllabus that is designed by a trainer or a superior within an academic department, or worse still, she or he may be relegated to the position of grader or discussion section leader. This doesn't have to be the case, and it is undoubtedly not the best way to train innovative educators. The following study is a sample of the sort of course that a graduate student can design and research if given the appropriate guidance and free rein. It is a condensation of my master's thesis in the field of teaching English as a Second Language (ESL). The thesis, in essence, was a much longer case study report [Golliher 1997] that evaluated the outcomes of two pilot sections of an ESL composition course that, in collaboration with Phil Black, another graduate student, I extensively revised and taught. (Phil taught one section and I taught the other.)

The focus of my study, the revised ESL composition course, featured cooperative learning, collaborative writing, portfolio grading of students' individual writing, and thematic sequencing of assignments (multiple assignments sequenced to lead students through exploration of a single complex topic). The course, taught at a large Midwestern land grant university, was one we revised specifically to better achieve the course goal of preparing ESL students for the university's first year composition program.[1] The changes in the course enabled ESL students to write assignments modeled on first year composition assignments—in particular academic and argumentative writing assignments.[2] This summary report informs whether I ultimately found it valuable to teach first year composition assignments in the ESL composition class, as well as whether and in what form I would retain each of the innovative course elements. This report should be of interest to educators concerned with innovation in composition pedagogy or with the use of case study to investigate and evaluate classroom innovation. The conclusion includes a discussion of the value of small-scale case study of classroom innovation.

METHODS

Our classes included 24 students from 11 countries, in six groups of four students each. (See Appendix A for a more detailed description.) Over the semester, the groups concentrated their writing and research on single topics—two groups per topic. Case study data were collected on both individual students and writing groups.

The data listed in Table 1, as well as my own observations as a classroom teacher, were drawn upon for this report.[3] Of this data, the sources drawn upon most heavily are my own observations, the departmental course evaluations, the writing attitude surveys, and the writing attitude reflection essays.

TABLE 1

CASE STUDY DATABASE

Data from whole classes

Midterm evaluations (my class only)
Departmental course evaluations (my class only)
Portfolios of individual writings
Consensus research papers from each group
Consensus research paper assignment evaluations
Group participation evaluations (my class only)

Time logs of work done on the group paper (my class only)
Writing attitude surveys collected pre- and postclass
Writing attitude reflection essays—"final essays"
Notes from two interviews with my colleague Phil Black

Data from embedded collaborative writing group
Pre-, Mid-, and Postclass interviews
Observations and tapes of meetings
Drafts in progress toward the final draft of the consensus research paper

The writing attitude surveys administered to our classes both before and after the course were based on the most current version of the "Writing Attitude Survey" created and described by Wallace [1994].[4] According to Brozick, this survey provides "insight into students' writing attitudes" as well as a "window into describing some of the problems the must overcome," which can "prove valuable in learning how to teach" them [1994, p. 67]. Questions asked in the survey relate to the following categories: writing apprehension, sense of control about writing, belief in the usefulness of group work, desire for teacher control of class, student involvement in class, belief that writing ability is a gift, and belief in the usefulness of collaboration.[5] I altered the demographic portion of the survey in order to collect data pertaining to international students, and, in the interest of brevity, I eliminated some questions (those related to attitudes toward the "usefulness of planning" in writing).[6] I also made a point when administering the survey to explain some of the idioms and phrasal verbs it contained, and to encourage students to ask questions about any vocabulary in it that they did not understand.

The survey is composed of statements about writing to which students indicate agreement or disagreement on a Likert scale, with the scoring for some responses being scaled positively and for others negatively. In keeping with Wallace's practices, Phil and I assigned students final essays requiring them to reflect on changes in their attitudes over the course of the semester [1994, p. 141]. Wallace terms these "reflection summaries" [personal communication, June 1994]. "By reading what individual students have to say about how their attitudes change," Wallace says, he is able to "discover a great deal" about the meaning of overall changes in the measured attitudes of whole classes [1994, p. 141].[7]

COURSE DESCRIPTION

As mentioned above, the course, titled and hereafter referred to as English 101C, sheltered ESL students in completing assignments such as those they would later encounter in first year composition. Much of the course was devoted to argumentation and writing from sources, since we deemed these to be particularly crucial to the students' success in first year composition. A third of the way through the course, students were researching, reading and sharing material from library sources. They were engaged not only in writing tasks atypical of those in the standard 101C course, but also in atypical speaking, listening, and reading tasks. In addition, the revised course provided 101C students with far more experience in computer use and cooperative learning than did the typical 101C course. My teaching partner Phil, a teaching assistant and a PhD student in rhetoric and composition, collaborated with me on both the course design and implementation. We each taught a single summer session section which met five days a week for an hour, for eight weeks.

Though the assignments in our course were of roughly the same length and complexity as assignments in first year composition, students wrote fewer assignments over the course of the semester than they would once they were mainstreamed, and they revised and edited only a subset of the assignments to meet what Phil and I considered to be the standards of mainstream first year composition. Our course was intended to prepare students for first year composition—not replace it.

In regard to the innovative elements of the course—the collaborative writing assignments, cooperative learning activities, thematic assignment sequence, and portfolio system of grading students' individual writing—their inclusion was keeping with recommendations made by Schlumberger and Clymer [1989a] for tailoring composition classes to ESL students' needs. They suggest that composition teachers "organize courses around thematic units," "reduce the assigned number of formal, polished essays," and "encourage students to develop and use all four language skills" through group work [pp. 122-124].

The units in the revised course followed the phases of structured academic controversy—a cooperative learning activity that engages groups of students in rounds of debate and reversals of position followed by group consensus. Structured academic controversy encourages students to think critically [Johnson, Johnson & Smith, 1991]. Phil and I included it in the course to help the students in the course write argumentatively, hoping that ultimately it would, to use Spack's phrase, initiate them into the academic discourse community [Spack, 1988]. More immediately, we hoped that it would encourage what Burnett [1993] refers to as substantive conflict—considered disagreement that generally results in higher-quality collaboratively written papers.

The assignment sequence for the course, paralleling the assignment sequence in the first semester of our university's first year composition curriculum, started with personal experience writing and moved through summary writing to argument. Specifically, the assignments were as follows:

1) Diagnostic Essay, based on personal experience ("What I Hate About English Classes"). This assignment was intended to give us insight not only into the students' writing proficiencies but also their classroom experiences and learning style preferences.
2) Exploratory Writing (on a controversial issue selected as a theme for the semester by the student and at least seven other students). Our students nominated then voted on controversial issues to study, eventually electing to examine (1) gun control, (2) homelessness, or (3) interracial relationships.
3) Summary Writing (two different summaries on articles related to the selected issue).
4) Collaborative Position Paper Outline (one outline co-authored by a group of four students, defending either a pro or con stance on questions related to their chosen controversial issue: Is gun control necessary?; Should we house the homeless?; Are there racial boundaries to loving someone?). The outline assignment Phil and I substituted for a collaborative position paper assignment we had originally planned. We made this substitution due to time constraints and due to the ease with which an outline assignment lent itself to clear, easily discussed class presentations (presentations being crucial at this phase of the syllabus).
5) Consensus Research Paper (a paper defending a consensus position, co-authored by a group of four students, two of whom had just outlined the pro position on their issue and two of whom had just outlined the con position). This paper was based on the students' research and thinking over the entire course of the semester.
6) Final Essay (a reflection essay on the changes in the students' writing attitudes over the course of the semester). This assignment was something of a postscript to above sequence, and its purpose was to get students to reflect on their attitudes and the course, and to report this reflection in such a way as to demonstrate that they had learned academic style writing.

These assignments were easily coordinated with the phases of structured academic controversy, as explained in Appendix B.

COURSE EVALUATION

COURSE OVERALL

In the final analysis, the piloting of this course resolved many issues. After the course was over, I was left with no doubt about whether 101C students were capable, with appropriate assistance, of fulfilling some assignments from first year composition—those which asked them to share and argue from personal experience, and to summarize articles. By and large, I was also pleased with how the major course elements contributed to student success.

However, as a teacher, I felt this was a demanding course to teach. If group projects can be difficult to manage, then group projects embedded in an innovative course design can be even more unwieldy. Phil and I were forced to develop materials as we went along; our syllabus came out in three installments, and we had to write assignments from scratch and substantially revise others. Being busy graduate students taking courses ourselves, we hadn't had much preparation time before the semester, and we had extra demands on our time during the semester.[8]

On the other hand, the energy and enthusiasm that the course frequently generated made the course enjoyable to teach. High points for me were group discussions when students presented their initial positions, one-on-one conferences with those students who actively engaged in the revision and editing process, e-mail exchanges with those students who established close e-mail relationships with me; and the position paper outline presentations, which gave me the opportunity to facilitate what I considered to be the best critical discourse of the semester. I also enjoyed reading many of the students' final essays, especially the ones that seemed to demonstrate that their authors had learned how to incorporate into their own writing, independently of a teachers' help, various aspects of academic writing.

By the end of the course, many of our students did seem to have become initiated into the academic discourse community, or at least to have become much more familiar with its expectations for argumentation. In general they also, with the course's scaffolding, seemed quite capable of meeting my standards for first year composition.[9] Furthermore, there was an absence on the final course evaluations of any comments to the effect that this course was just too hard (an important point, given that the assignments were much more complex than typical 101C assignments). However, one of the better writers did complain in a Daedalus Interchange conference (a synchronous computerized discussion) that she had consulted with a friend of hers and decided the course was "harder than 105!" (the second semester, first year composition course). In a sense, this was a backhanded compliment—clearly she and her friend had recognized that Phil and I were serious about preparing our students to engage in argumentative writing. Happily, this student was later one of the students who was the most satisfied with her group's consensus research paper, and indeed the course as a whole. (In her final essay she states, "I am so grateful to be in the English class that really changed my writing attitudes. The benefit and knowledge that I got from this class will surely help me in my future paper/writing.")

In retrospect, one problem of which I am convinced is that we pushed our students a little too far in terms of the number and kinds of assignments we asked them to fulfill. I remain unresolved about whether it was a good idea to have our students writing long research papers. Stepping back and looking at the curriculum as a whole, I would like to shift some of what we attempted in this course either down to the preceding semester of ESL[10] or up to mainstream first year composition.

One of the reasons for the overkill in this course was that I felt a pressing need to prepare students for the research paper writing that is so suddenly introduced in first year composition. If, however, some of the elements of this course—a portfolio grading approach, for example, or a thematic assignment sequence—were adopted in first year composition, ESL students as well as native English speakers would no longer have to sink or swim when it came to research papers, and 101C could presage rather than teach writing from sources. Regardless, however, of whether any of these changes are adopted in the curriculum, if I were to teach 101C again I would focus the course more, emphasizing either individual or collaborative writing, as I discuss later.

Writing Attitude Survey Results

Despite the changes I suggest in the course, overall I consider it to have been a success, one reflected in the results of our Writing Attitude Survey. Comparing pre- and post-class means in the scores for various attitudes, we found an overall increase in the category "sense of control over writing" [statistically significant at the 0.05 level using a two-tailed paired t-test to compare the means of the pre- and postclass groups; $t = -2.2$ (df 23) $p < 0.05$] [Winer, 1971, p. 44-46]. Though the changes in the mean scores for the other attitude factors were not statistically significant at the 0.05 level, the change in the mean scores for the students' "writing apprehension" was indeed significant at the 0.1 level [$t = 2.02$ (df 23) $p < 0.1$]. (Given the very small sample I had to work with, I consider a 0.1 significance level sufficient).[11] These results suggest that the course we taught succeeded in encouraging students to feel less fearful and more in control of their writing. See Table 2 for more complete comparisons of mean attitude scores of our combined classes, as measured by the pre- and postclass Writing Attitude Surveys.

Given the importance to our course of group work, it is noteworthy that the pre- and postclass mean scores for the group work attitude factor decreased, though by a statistically insignificant margin [$t = 1.39$ (df 23), statistically insignificant at a 0.1 significance level]. Prior to my analysis of the results of the surveys I had actually expected the change in the mean scores for the students' attitude toward group work to be slightly positive. In contrast, Phil, who had taught collaborative writing before, was not surprised at the (statistically insignifican) drop in scores. In fact, one of his objectives was to teach students that "collaboration is difficult," so he was not even particularly disappointed in this outcome.

Departmental Course Evaluation Results

My departmental course evaluations for this revised 101C did not seem to me to differ radically from previous evaluations I had received for teaching the same course. Making a rough, unscientific comparison, the main differences I saw in the Likert-scaled item responses were for the items "the writing assignments were distributed over the semester" and "you were prepared for the course and attended regularly." In the case of the former item, "the assignments were distributed," my students in the revised course seemed to agree with the statement less strongly than did my students in the past, and I interpret this as having been a result of portfolio grading. (See the later summary evaluation of portfolio grading.)

The other item for which responses seemed to differ ("you were prepared for the course and attended regularly") was an item which seemed to elicit more agreement from the students taking our revised course. This could have been due to major features of the course design. The cooperative learning, for example, could have helped prevent students from getting lost, or the single topic focus could have helped the students experience growing expertise and therefore preparation. The effect could also, however, have been due to something entirely different: our effective attendance policy, for example. (Students were required to write position papers on topics of their choosing for each day absent, and these papers were required to be of a page length equal to the number of days they had missed class during the semester.)

TABLE 2

COMPARISONS OF MEANS OF PRE- AND POSTCLASS ATTITUDE SCORES FOR COMBINED CLASSES

	Range of possible scores	Preclass mean	Postclass mean	Difference
Attitude Factor				
Apprehension	5-20	12.6	11.7	-0.9*
Belief writing is a gift	4-16	7.3	7.5	0.2
Sense of control	6-24	14.3	15.6	1.3**
Usefulness of collaboration	5-20	14.3	14.2	-0.1
Student involvement	4-16	10.7	11.5	0.8
Desire for teacher control	5-20	14.0	13.6	-0.4
Usefulness of group work	3-12	8.4	7.8	-0.6

* preclass and postclass means differ at a 0.1 significance level

** preclass and postclass means differ at a 0.05 significance level

In retrospect, given how little information I got from the standard, departmental evaluations, I am glad I supplemented them with other means of evaluation. On the standard evaluations, not only did I get little out of the Likert-scaled items, but I also often received terse (and sometimes no) responses to open-ended items. Even when lengthy, these responses were on topics seldom related to the major course elements—compliments on my teaching style, for example, or complaints about my handwriting. Where students discussed their own improvements as writers, this discussion was fairly generic. The main recurring theme was that five students commented on learning about how to improve their organization in their writing. Only two students even mentioned the group writing, and they mentioned it vaguely. I am quite convinced from this experience of the importance of focus in instruments used to evaluate teaching innovations.

Sample Reflection Essays

In contrast to the students' course evaluations, the final reflection essays, part of my focused evaluation, produced much data that was useful to me. Some of the final essays were downright inspiring. The following exam, excerpted in its entirety, shows that at least for this student author, our 101C course could lead to much learning about writing and the writing process, as well as to improved attitudes about writing, *even though this student came into class with negative attitudes about the class.* (This and all student excerpts preserve the students' own grammatical idiosyncrasies to give the reader a sense of the students' natural language; students' final essays, unlike their selections for their portfolios, did not undergo editing and revision.)

> English 101C was the last thing that I remembered for taking classes in my academic planning. I did not pay much attention for it, because the credit that I will get for the course can not be applied for graduation credit. Because next semester I have to take English 104, so I have to take English 101C in this summer.
>
> First time in the English class, I felt it was enjoyable. I said myself "hmm.... not bad for the class. All the student is friendly, and Ms. Roberta is great. She is friendly, humorous, and could make interaction with us, that mostly is an international student."
>
> When I got more and more involved in the class, Ms. Roberta give us assignments of personal experience essay, and how to make a summary from an article. She also thought [taught] us about summarize an article and searching statistical data in the library. The last assignment that she gives to us was a research paper assignment.
>
> The last one is usually the hardest ones and it was. We work as a group to finish the research paper.
>
> With my experience for almost 8 weeks in English class, I am really amazing of what I can found and get from the course, especially related to my writing attitude.
>
> There are three changes that I felt during my English class. The sense of control about writing, about the belief that writing ability is a gift and usefulness of group work.
>
> Before, I belief that writing was a gift. People who could wrote [write] so many pages and had so many ideas in their essay were a special one. This class makes me change my mind about it. It makes me realize that writing skill can be developed. More and more practice can give us better and better skill of writing. Much revising could make our ability in writing is increasing too. The assumption that writing is a gift is not fully right. Writing skills can be developed with practicing.
>
> Sense of control about writing was the second changes in my writing attitude. The assignments that Mr. [Ms.] Roberta gave us make me learn about the importance of controlling our ideas. We have to keep our ideas in control, to have a good and structured essay. If you don't control all the ideas that you have, you will just make the reader confuse and bore when they read your essay. We also learn how making transition words or sentences are really important to build a relation between ideas.
>
> The last one was about attitude of usefulness of group work. I used to have an opinion that group work was only wasting my time. I would rather do it by myself than having a group work. I was wrong, the group work that I have in these class makes me changing my mind. I feel how a work group is really useful. It will take much time and energy if I work alone. It will really hard to finish the paper. Through the group work, I felt easier. We can share so many ideas and work together in editing and revising, and building transition words or sentences. We were helping each other.

Many aspects of this essay point to successes of the course. The author appreciated the main assignments and the library research and viewed, as I did, the group research paper as the culmination of the course. As I hoped, he found the collaboration helpful, and he developed confidence in his writing, as well as rhetorical and grammatical tools for continuing to improve it. This essay, as it is not anonymous, needs to be interpreted in light of other data; however, I have particular trust in the honesty of this student. As his introduction shows, and as candid e-mail feedback from him during the class proved, he was not a student who was unwilling to discuss his neutral and negative impressions of the course and of academia. (He also was a "B+," not an "A" student, so his end-of-the-semester praise was probably not in anticipation of an inevitable reward.)

Perhaps most gratifying to me is the way this essay itself demonstrates that the author had learned much about writing, including much which would prepare him for first year composition. The student introduces the essay effectively, and sets immediately to fulfilling the core requirement of the assignment—that he specifically discuss three attitude factors and any changes he predicts his surveys will measure in his attitudes about these matters. He does so in an organized and succinct fashion, using sentence-level complexity on the order of that required for writing successful first year compositions. All of this despite the fact that, as his essay also demonstrates, his English is still fraught with non-nativisms. So his essay also is a demonstration that grammatical difficulties can co-exist with readiness for and success in English for academic purposes.

Of course, not all of the final essays bore such evidence of student success in the course, and indeed very few students finished the course with visions of it so completely compatible with my own. One essay actually contained evidence of a great deal of resistance to the course. Its author, Sonia, even resisted the final essay assignment itself. She wrote a long, discursive, introspective final essay quite antithetical to academic style specified; her essay was much more like a free-writing, albeit a rich one, than a formal essay. (Essentially, though she discussed much that was related to the subject of writing attitudes, she only directly addressed one of the attitude factors from the survey, though discussion of three was required). Because her reaction to the course was so different from that I'd hoped my students would have, her case is worth examining.

Sonia's resistance had been hinted at earlier in the course by her failure to establish an e-mail relationship with me, even though periodic e-mails to instructors were assigned. This was a hard hint to pick up on, though, because a few other students had failed early on at the same task, but their failure had been caused by difficulties with computing. After resolving their technological difficulties, they had fulfilled the email assignments. Sonia, though, made clear in later written (as opposed to electronic) feedback which I required about the outline assignment that she was resisting the course itself, saying "I felt frustrated because before to start this course I had a lot of expectations, so, any of those have being doing." [I interpreted this, in context of other complaints she made, to mean none of her expectations had been met.][12] By the time I received this feedback, unfortunately, it was late in the course, and she continued to avoid communication with me over e-mail and to avoid seeing me in my office, despite direct invitations.

In a sense though, Sonia's resistance may have been due to the very success of the course as an academic English course. She was a student who had already developed a sense of identity as a creative writer, participating in her home country in the Costa Rican Writer's Circle, a student writing workshop which she found vibrant and inspiring and which, she says in her final exam, ended with at least thirty percent of her classmates publishing books. (Sonia's specialty was poetry writing, and she too published.) Towards the end of the essay, she does acknowledge ways in which the course benefited her, saying "about my self during this course I will be sincere, I had to recognize that it made me improve my writing skills in reference to formal papers, how get information, uses of the computer, and be patient with my communication mistakes." But overall, one gets the impression that, to put it bluntly, she really hated the course. Says Sonia in her essay:

> During the last nine years I had concentrated my writing in Poetry, spending most of the time in learning how to be more and more concrete because one of the principal secretes of poetry is to write the essential words with the most possible feelings. That's the reason, I think, which make me love writing a lot and it is the same that made me had a hard time now expressing myself in a formal way.

Sonia also expresses, in a very reflexive fashion, her process of struggle with the organization I required in the students' writing, and her reasons for resisting this organization in the very essay she is writing:

> There are a lot of [as many] different ways to start an essay or writing paper as persons in this world; some rather to make a previous plan which has all the contents to develop; some prefer to go ahead with their creativity; some like to make an outline to put in order everything before start doing those, so, in this point everybody has the right to decided about what ways is better to them. In my personal case, *like in this paper* [emphasis added], I rather to express all I think freely, without plans, just with my feelings. Therefore the good or bad results depend from the effort that everyone put in their works.

Ironically, then, in Sonia's case, the course's very success as an academic English course may have led her to hate it, or at least forced her to struggle with the differences between academic English and the creative writing which was so near and dear to her. It's arguable, however, that a *more* successful academic English course would accommodate writing styles and histories such as Sonia's. Nevertheless, sooner or later students such as Sonia usually face, in today's academia at any rate, some cold, hard realities about the constraints it will usually place on their writing. (Indeed, my own personal writing history contains much struggle with and resistance to academic styles of organization and prescribed writing processes such as outlining.) Paradoxically, then, Sonia's struggles may be viewed as a sort of course success.

Perhaps I am glossing over Sonia's resistance to this course and dealing too superficially with the issues it raises regarding the place for induction and creativity in academic writing. In reality, hers is the reaction which haunts me, and which may inspire or at least inform any future generation of ESL composition course which I design. For now, however, I am not throwing my new baby out with the bathwater. In the next section, I discuss the less than global changes I would make in the course, and the aspects of the course I would most definitely retain. Despite Sonia's criticisms, I do not feel compelled to revamp this course entirely, partly because I am increasingly accepting of polarized reactions to my teaching. I have begun to notice that innovative teaching often produces polarization in student response, and I believe that such polarization may be a real sign that something important is happening in the classroom. (Students don't love or hate mundane, routine, predictable classes. Students who are challenged may rise to the challenge, or rebuff it, but they cannot ignore it.)

SUMMARY EVALUATION OF SPECIFIC COURSE ELEMENTS

Thematic assignment sequencing

Although more direct evaluation of this element is called for, I deemed the thematic assignment sequence in our course very successful, and I would certainly use it again. I consider it to have been an integral part of the scaffolding that enabled our students to write up to the standards of first year composition. Based on the success of this element, I would encourage other ESL teachers to employ assignment sequences that allow their students to write about and research topics over several assignments. I would also hope in the future to see more materials published for teachers on implementing theme-based courses.

Portfolio grading

Portfolio grading, like thematic assignment sequencing, was important to our students' success. It was problematic, though, in that it created an end-of-the-semester time crunch. If I were to teach the course again, I would experiment with modifications to our grading approach which would preserve between-draft feedback and the selection of assignments for revision and editing, but which would stagger the due dates of the final drafts of the selected assignments. Nevertheless, based on my experience teaching this course (and other courses), I would highly recommend that other composition instructors consider very seriously the advantages of a portfolio grading approach, and that they themselves experiment with variations on it. I would caution them against ignoring the importance of selection in creating focus for both teachers and students. I would also caution instructors against switching from a multi-draft approach toward grading individually-authored compositions to a single draft approach toward grading collaborative writing, as this switch proved to be confusing for students.

Another reason to preserve some form of portfolio grading in the course was (unsurprising) finding that the between-draft feedback on the compositions was very helpful in teaching students how to avoid plagiarism. Lectures teach academic notions of respect for intellectual property to only some of the students, some of the time. Instead of just lecturing about plagiarism, Phil and I first required our students to complete assignments that involved the use and documentation of sources, and then conferenced with them until their writing acceptably incorporated and credited source material. In this way we helped students learn to avoid plagiarism in context, with cues. Wells [1993] has already recommended teaching students to avoid plagiarism in such a manner, but her recommendations relate to support classes in writing-across-the-curriculum programs, not regular ESL composition classes.

Cooperative learning

There's certainly more to cooperative learning than peer review and group writing (the two cooperative learning activities most commonly employed in composition classes). Structured academic controversy is very worth trying, and I recommend it to other instructors. I found it to facilitate both critical thinking and argumentative writing. I feel certain that it contributed significantly to our students' success at writing first year composition assignments. If I were to teach 101C again, I would continue to structure my syllabus by the phases of structured academic controversy.

It is not, however, a panacea, and course designers and curriculum planners need to keep this in mind. Cooperative learning has often been suggested as a way of providing ESL students with high quality speaking and listening practice [Long and Porter, 1985; Savova and Donato, 1991]. In the groups I observed, however, it was obvious that some students failed to get as much speaking practice as others. So though I would like for those interested in integrating listening and speaking skills into 101C to consider including structured academic controversy in 101C. For now, though, as an instructor, I am satisfied with the way this course provided a greater variety of both speaking and listening opportunities than is typical of 101C, particularly since providing these has not been explicitly stated as a goal of 101C. (I am not, however, satisfied with the group power dynamics that may have led to the uneven distribution of speaking opportunities; possible interventions into group dynamics I take up in the next subsection.)

Collaborative writing

It was in this course element I most felt the strain of trying to do too much in one course. Partly, no doubt, this was because the group writing came at the end of the course, but partly, I also believe, this resulted from the sheer complexity of group dynamics and group communications. In retrospect, I sincerely question my "product" orientation toward the group paper, and I would make many changes in how I taught this part of the course if I were to teach the course again.

To start with, though, I would need clarification on how important the teaching of cooperation is at this point in the overall English curriculum. If teaching cooperation were deemed very important, I'd focus a great deal more on collaborative writing. If it were not, I'd consider simply scrapping the consensus research paper and keeping the rest of the course intact. (This is truly an interesting "course development," given that I originally conceived of the collaborative research paper as the capstone assignment of the course!)[13] In other words, my findings lead me to desire clarification from curriculum planners—clarification that is all the more necessary due to the relatively recent popularization of collaborative projects in higher education.[14]

My study of the collaborative writing in this course leads me to make other recommendations as well. For example, after seeing how differently some group members can view each others participation levels, and how damaging disagreements about participation levels can be, I recommend that classroom researchers examine "slacking," its complexities, causes, and remedies. (For details, see Golliher, [1998]). My observations also uncovered "the problem of the sensitive student"—the student who contributes greatly to his or her group, but leaves it feeling badly due to group dynamics; further study of these students is warranted. (Again, see Golliher [1998]). Additionally, I'd recommend in general more studies that offer transcribed accounts of the teaching and learning of cooperation. Johnson, Johnson and Smith [1991] repeatedly exhort teachers to instruct students in social skills. I'd like to read about instantiations of students applying these skills when they are engaged in collaboratively writing papers, and I'd like to see evidence that classroom instruction makes a difference in their ability to do so.

Some of the problematic group dynamics I observed may well have been due to gender differences in communication, so I further recommend that instructors consider whether they can teach students to better deal with these differences.[15] However, because of the complexity of such communication difficulties, instructors may need to contemplate what sort of presence they themselves want to have in the groups. As for myself, if I were to teach collaborative writing again, I would experiment with canceling formal classes and attending initial meetings of writing groups in order to help them with their group dynamics and to assist them at productively working their early substantive conflicts into their papers. Due to my successful experience with observing the embedded group in my study, however, I would attempt to take a backseat rather than controlling role during these initial meetings, along the lines of the "consultant" role advocated by Duin [1984]. My intuition is that more than any classroom discussions of social skills, or monitoring of groups for their practice of these skills, my direct presence along with minimal intervention in groups would actually improve the groups' dynamics.[16]

In sum, even though I am considering eliminating collaborative research paper writing from my syllabus for teaching 101C, I am still game for teaching it in other ESL contexts, and I am actively pondering ways I can do so effectively. After this, my first, experience of teaching collaborative writing, I am inclined to agree with Crismore [1992], who says "we have learned much about collaborative learning, but we still have much to learn." Like Jacob, Rottenberg, Patrick, and Wheeler, who studied cooperative learning and found it to be a mixed bag, I feel "cooperative learning is not a silver bullet; neither does it deserve to be one more innovation that is tossed out when it does not work. It is a potentially powerful instructional strategy that requires careful attention" [1996, p. 274].

I remain skeptical of the position of outright critics of collaboration, such as Carson and Nelson [1994], who claim that the "social situations in which [ESL students] find themselves at best...may provide a behavioral context that does not deliver anticipated social cohesion [and] at worst...may provoke resistance to the principal pedagogical technique being implemented for the purpose of developing their writing abilities." My findings suggest that, as in composition classes for native speakers of English, in the ESL context, though some of the expected benefits of collaborative writing projects will not pan out, others will.[17] And whether we like it or not, as I have already pointed out, collaborative projects are becoming regular features of many college courses. Avoiding them entirely in our ESL classrooms may be unwise. It hardly makes sense to shield ESL students from collaboration in our classrooms if they are later going to be required to collaborate in the even more socially complex context of classrooms that integrate international students with Americans. This brings us to the curricular level again, and to decisions which could be made there to clarify whether the inclusion of collaborative projects is important in individual classes.

Unilateral, top-down decisions about including collaboration in courses are not advisable, however, as they could create more problems than they solve. Crismore reports that, despite annual roundtables promoting collaborative learning in her writing program, some teachers "are hesitant to try or to try again...to make use of collaborative learning or more varied use of collaborative learning" [1992, p. 13]. Moreover, where collaboration would be prescribed, surely some instructors would be downright resistant. And given the difficulties inherent in collaboration, instructor resistance to it would almost certainly cripple its effectiveness in the classroom. My experimentation with it in my classroom leaves me inclined to proceed with it only in contexts in which I personally feel a commitment to both to the activity and to teaching it with intention and focus.

CONCLUSION

Having productively employed case study methods to evaluate a radically revised course, I strongly recommend case study to any teacher attempting to evaluate major innovations in his or her classroom. Furthermore, I specifically recommend Wallace's Writing Attitude Survey, along with the assignment of student essays on changes in writing attitudes, as a component of case study evaluation of innovative writing courses. Overall, I found reflection combined with flexibility to be critical in successful classroom innovation, and I found that case study greatly facilitates such reflection while providing the research flexibility that is vital under conditions of rapid course change.

Moreover, as course development comes to be seen, as Graves [1996] would have it, as a creative process, teachers' means of inquiring into and evaluating courses will also have to become more creative. The instruments we use, and our interpretations of the data we collect with them, will be influenced by our new model of the course. In light of this, I believe case study, as well as teacher training in case study, will be increasingly important.

Case study should not be underestimated; case studies are not neat little things that lend themselves automatically to graduate student inquiry (implied, but not stated, by Nunan [1992, p. 88]). Case study, due to its potentially unbounded nature, is a method of inquiry that can be time-consuming and overwhelming. When it is employed in the evaluation of an innovative course that is itself in flux, conducting the study and writing up the report can become quite confusing. Under the circumstances, it is important that mentors and teacher-trainers help novice teacher-researchers focus. This should not, however, be overdone. A little free rein, analogous to that I was given in researching and redesigning 101C, can go a long way in encouraging the independent development of a teacher such as myself, and in keeping her interested in her profession. Where an effective balance is struck, experience in classroom case study can be key to effective teacher training.

APPENDIX A - STUDENTS

Of our students 24 students, sixteen were in my section and eight were in my colleague's. All but one were international undergraduate students ranging in age from 19 to 26. The exception was an adult student (over 30 years old) from Puerto Rico who was taking the course for professional purposes and to prepare himself for later graduate education.

Seventeen of the students had been in the United States for 1 year or less; four for 1-2 years; two for 3-4 years; and only one (the adult student) for more than 4 years. Upon entrance into the university, the international undergraduates' TOEFL scores had ranged from 507 to 607 (mean score: 540; median: 533). For placement purposes, they had all taken a timed, holistically scored essay test and had been determined to require either one or two semesters of ESL composition instruction (English 101B and/or English 101C) prior to mainstreaming into freshman composition. At least seven of our students had placed into English 101B prior to taking 101C, according to their self-reports.

At least two students who placed directly into 101C were attempting to simultaneously take their first semester of freshman composition at a local university. Two other students had taken at least one semester of freshman composition already at colleges or universities other than ours (and another had audited a freshman composition class), but these students had still placed into pre-freshman composition ESL classes. Two more students had already taken a semester of ESL composition at another college. Eight students reported having taken intensive English courses in an Intensive English Program in the US.

Many of our students were ethnically Chinese—eleven total. Of these, one was from Hong Kong, one from the People's Republic of China, two from Taiwan, and seven from Malaysia. Two other students were Malaysian, but not ethnically Chinese—one was Malay and the other was ethnically a mix of Malay and Indian. Five students were South Korean, and four were Hispanic (one each from Puerto Rico, Guatemala, Nicaragua and Costa Rica). One student came from Indonesia. Many of our students were multilingual.

APPENDIX B: STRUCTURED ACADEMIC CONTROVERSY

The syllabus included all seven stages of structured academic controversy: 1) preparing positions, 2) exchanging ideas, 3) presenting positions, 4) advocating and refuting, 5) reversing perspectives, 6) reaching a decision, and 7) processing [Johnson, Johnson & Smith 1991, p. 7:22]. We stretched these seven steps out over the entire semester and integrated them with the students' writing assignments. "Exchanging ideas" occurred in our course when students shared their exploratory writings during peer review with position partners in their home groups. "Presenting positions" occurred when the students shared their exploratory writings with position partners in their sister groups.

"Presenting positions" also occurred, along with "advocating and refuting," during a class session in which each group discussed and debated the pro and con sides of their issue. "Reversing perspectives" occurred when the students wrote summaries and position paper outlines taking stands opposite to those they had taken in their exploratory writings, and then presented their outlined positions to the entire class. "Reaching a decision" occurred as each home group came to consensus about the position the group would take in the co-authored consensus research paper, and as students in their groups worked out the details of their particular consensus positions in the writing of their papers. "Processing" involved ongoing class and electronic discussion, and each student's filling out the consensus research paper evaluation form and sending regular, assigned e-mail notes to his or her instructor.

In a sense, then, Phil and I borrowed heavily from Johnson, Johnson and Smith in designing our course. We had, however, greatly expanded on their concept. A standard structured academic controversy as designed by these educators requires only eighty-five minutes of class time, with some additional follow-up time for discussion of group interactions.18 Structured academic controversy does not typically involve the writing of formal compositions—just a group report drafted in thirty minutes at the end of the activity. Thus, not only were we using a cooperative learning activity rarely used in composition classes, but also we were using it in a unique fashion.

ENDNOTES

1. This university, like many universities, has replaced the term "freshman composition" with "first year composition" in order to be gender-neutral.

2. Sheltering is usually conceived of as something provided in a *content area* buffer classroom (such as a science or math class which provides ESL students with "temporary refuge" from mainstreaming, grouping them together for "comprehensible input in low anxiety environments," structured by sympathetic and preferably specially trained instructors) [Richard-Amato, 1988, p.59]. In designing and defending this 101C course, however, I maintain that ESL teachers who teach transitional courses would be making a useful conceptual shift if they conceive of themselves as teaching sheltered English courses rather than more typical level-specific ESL courses.

3. The original case study had a slightly larger database.

4. Multiple responses contribute to students' scores for each category, and factor analysis has been employed to ensure that the statements which contribute to each attitude category are appropriately grouped, at least in terms of the general student population at Iowa State University, where it was tested and refined [Wallace, personal communication, June 1994]. (Note: ISU's student population is only about 10% international.) Wallace cautions that the Writing Attitude Survey should be used "descriptively rather than prescriptively," saying that the "results have not been correlated with any other kinds of measures" and so "have to be interpreted in light of other data" [1994, p. 141-142]. He also points out that "any differences in pretest and posttest scores may or may not be due to" the treatment in question—in his case collaborative planning, in mine the innovative 101C course.

5. Unfortunately, given the context of my study, this last category construes collaboration as collaborative planning, not collaborative writing.

6. Collaborative planning of individually authored papers was central to the classes first administered the Writing Attitude Survey, but was not a feature of the course I developed.

7. Because our students' reflection summaries were to be graded final exams, I expected the students to take the writing of them seriously and to be more thorough in their explanations than they might be in an anonymous evaluation. But because the essays would not be anonymous, I realized that the students might be less than candid about their negative experiences, so I viewed the students' reports in them in light of my personal observations and of data collected on ungraded forms of student feedback, including the anonymous course evaluations. Furthermore, I encouraged students to write honestly and I reassured them that they were not being graded on their attitudes themselves.

8. Under more favorable conditions, I would probably feel less stress teaching this course, especially now that I have had experience at it.

9. The term "scaffolding" to describe linguistic support of language learners was borrowed by ESL teachers and researchers from the field of child language acquisition, where it describes the many ways caregivers help children develop their first languages.

10. The earlier semester could include arguing from personal experience, for example, or could introduce structured academic controversies.

11. Though a one in ten chance of a type I error (rejecting the null hypothesis when it is indeed true) is too great a chance for most researchers to take when publishing research results, it does not seem too great a chance for a teacher like myself to take when developing working hypotheses with which to evaluate her own class.

12 I had required students to write three "I" statements about the course following the position paper outline assignment.

13. Note that even this drastic solution would still leave the students with many experiences of cooperative learning and collaborative project work—just not of collaborative research paper writing.

14. The nature of the projects will also need to be taken into account. In my current educational context, I have used collaborative Web site construction as a final project for a similar course. This project is typical of collaborative work undertaken at our college. It also more naturally entails individual accountability and individual expression than does a collaborative paper project, since linked pages are individually authored.

15. In the embedded group I observed, one female student felt her comments were discounted by the other three male members of her group. In an interview, she openly expressed her appreciation of my presence at her group's meetings.

16. The risk I run in intervening, even minimally, in my students' groups is in teaching them that they need a teacher in order to function effectively as a group. Analogously, Johnson and Johnson point out that traditional, authoritarian school discipline systems teach students that "adults or authorities are needed to resolve conflicts" [1994, p. 236]. In intervening in groups in future classes, I need to evaluate whether I am assisting students to become better collaborators, or whether I am inducing in them some sort of dependency on instructors for conflict resolution.

17. Speaking of collaboration in mainstream courses, Donald Stewart wrote, "It will work with certain students in certain contexts. It most certainly will not work with a number of students in a number of contexts" [1988, p. 80].

18. They do, however, present an extended controversy, taught by Roger Johnson, that takes place over six one-hour class periods.

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TEACHING CHANGE ACROSS DISCIPLINES: STUDENT-DESIGNED BOARD GAMES

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Abstract

The author taught three 300-level courses on contemporary topics which are inherently dynamic, multidisciplinary, and international in scope: Contemporary Economic Development in Russia and Eastern Europe, International Information Systems, and Managing the Year 2000 Millennium Bug. To maximize interactive and experiential learning, student teams developed board games and held tournaments in each course. Examples of data sets and game scenarios are included, and the best of the board games will be available for play and evaluation. Game theory and its relationship to board games will be analyzed. Finally, plans to enhance this experiment will be presented.

INTRODUCTION

In the winter and spring of 1999, in overlapping sessions, student teams at Fairfield and at Sikorsky Aircraft invented board games in three different 300-level courses: Contemporary Economic Development in Russia and Eastern Europe, International Information Systems, and Managing the Year 2000 Millennium Bug. These courses were ideal for the experiment first, because the subject matter was dynamic, and second, because problem solving was multidisciplinary and unstructured.

Since the events of August, 1998, weekly economic crises in Russia were the rule rather than the exception. The Year 2000 Problem was unfolding throughout 1999, with a significant shift beyond from local technical solutions alone toward systems-wide management strategies and tactics. Finally, Sikorsky managers studied International Information Systems, and developed a textbook proposal as well as board games for a subject,t which is fluid, global, and incorporates both technological and management challenges.

FRAMEWORK

Since the scope of the important questions in all three courses was international, the arenas for investigation and the range of scenarios which the students investigated were massive and variable. In all, thirteen teams developed games and established their own rules and methods in the three courses, and the most important questions in the fields were presented.

The teams produced a variety of attractive and arresting games which enlivened the demanding materials. The students chose from a broad variety of game types, and although some developed their own rubrics and procedures from scratch, most mimicked popular games such as Monopoly, Clue, Trivial Pursuit, or Pitfalls.

The games were developed in secret and played and explained before the other teams in a roundtable session at the end of the semester. These tournaments were lively and stimulating, and the team displayed their ownership of their models and procedures with wit and imagination. They surrendered their work to the instructor with visible reluctance.

OBJECTIVES

The board games met three objectives: to expose students to the liveliness of debate in three changing fields, to compensate for the lack of current and comprehensive textbooks in each course, and to motivate teams of students to take command of the class. The games fulfilled all three objectives efficiently and economically. The students built up a substantial knowledge base through their brainstorming, reading, Internet searches, interviews, and continuous attention to daily events. The games served as a focal point for weekly discussions in which teams brought this material together for review, discussion, and categorization. Students isolated the most germane variables, identified probable parameters, confronted ever-changing scenarios, and developed strategies for the challenges encountered.

Additionally, in each course we asked, "What do we not know and which knowledge is not systematized?," in both theory and in practice. These observations were critical to the success of the courses. As self-proclaimed "intellectual pioneers," students achieved significant intellectual maturity through the experience of developing their own models and scenarios.

STUDENT RESPONSE AND INTERACTION

Both within and between the courses, the students' backgrounds differed significantly. International Information Systems contained all managers from Sikorsky Aircraft, from a variety of business areas—not one specialized in information systems although one student had received certification as a network administrator. Contemporary Economic Change in Russia and Eastern Europe was a cross-listed seminar was the capstone course for minors in Russian Studies and also an elective for School of Business majors in international business and in management. The Year 2000 course covered technology, crisis management, and the socio-economic effects of the crisis, and attracted a range of continuing education and full-time business students with a broad variety of majors and work experiences. In all three courses, fortuitously, the content, complexity, and processes in the games were impacted significantly by students' backgrounds, assumptions, and personal initiatives.

However, the dynamics of all three experiments were surprisingly similar. The author expected that teams would ask for guidelines, examples, sets of objectives for weekly team meetings, clarifications about content, and extensive advice on the final physical construction of the games. None of these expectations were valid, in any of the three courses. In fact, students flourished in an environment of autonomy, frantic brainstorming, fact-finding, experimentation, humor, and intrigue.

COURSE DESCRIPTIONS

All class sessions were three hours long. Initially, at the beginning of the semester, two hours of either lectures and discussion or students' oral reports preceded one hour of team meetings. The teams were allowed more and more time for their sessions, and they frequently met long after class had ended. In 1998-1999, the School of Business moved into a new facility, a former hotel and conference center. The lay-out of the building is ideal for these brainstorming sessions, with numerous lobbies, seminar rooms, study areas, and labs. Students procured their own construction materials, and developed their own models and rules.

All three courses had Midterm examinations based on the readings and discussions, and all three featured individual research projects in the second half of the semester. The students delivered oral reports on this research and thus taught during the first two hours from the Midterm to the Final examination. An entire three-hour session was allowed for I construction of the games and their rules.

For the Final exam, International Information Systems and Contemporary Economic Development in Russia and Eastern Europe submitted a detailed textbook proposal. These proposals organized all the readings and the students' oral reports, as well as other desired components, into a cogent outline and an introduction or conclusion which addressed the most important questions in the field. The final exam in Managing the Year 2000 Millennium Bug was a choice of two our of three essays, one of which was related directly to the games: "In this course, we have tried to address the most important questions through board games. Please discuss which issues, strategies, relationships, and outcomes were inadequately modeled in the games, and why."

Ironically, the unstructured and dynamic character of the subject matter empowered students to take varied approaches to the problems from the first session. The lack of coordinated solutions reflected the broad range of topics collected from multiple types of sources. In "the real world," salient problems in all three areas—economic development in the former Soviet Bloc, the Year 2000 crisis, and the challenge off coordinated international information resources—were the absence of a system-wide approach to the issues and the absence of effective leadership. The models which the students developed reflected these problems and their impact on strategies and tactics. Appropriately, the role of Nature, a non-player which takes random actions, was dominant in the games.

MANAGING THE YEAR 2000 MILLENNIUM BUG

In the Y2k course, students reached across these two problems in their investigations, and built the absence of linkages between technologists, managers, popular culture, and policy makers into a variety of models game models. The students covered the technological challenges and solutions in a month. The greatest contribution of the Y2K course was the first-hand exposure to contingency planning and crisis management strategies, particularly across international systems. The criticality of the problem, as well as the mystery of how, where, and when damage would occur at the turn or the millennium captured the class' imagination.

Board games were ideal for this course: to explore the state of readiness and awareness, to identify technological problems and solutions with precision, to identify management strategies, and to assign values to contrasting outcomes forecast by numerous authorities, ranging from Senator Bennett's and Dodd's Congressional Committee on the Year 2000 to scores of articles from the business and popular press on the Internet each week. The students consulted to dozens of industry studies and Securities and Exchange Commission readiness disclosure clauses, and conducted interviews for their personal research projects. In general, in Y2K board games, play was dominated by Nature, although students did define realistic payoffs for successfully addressing, diagnosing, remediating, and capitalizing upon the

TABLE 1

Risk (Readiness Assessment)

hoax: lose 3 turns
no big deal: lose 2 turns
expensive but local: lose 1 turn
crippling: draw crisis management card
severe widespread disruptions: draw triage card
several months disruption: draw contingency card
end-of-civilization: lose 3 turns
Y2K ready: gain 2 turns
Y2k compliant: gain 3 turns
Y2K certified: proceed to legal counsel and pay retainer

Year 2000 crisis. Tables 1 through 4 provide lists of typical conditions and repercussions in four representative areas: Readiness, Risk, Solutions, and Challenges. Table 5 contains data from a set of Opportunity cards from one of the games.

The enthusiasm and verve of the thirty students, representing the largest enrollment of the three courses, was outstanding. Strategies and actions were realistic, and the models were instructive. Perhaps the "frontier" mentality, the sense of discovery, which permeated this course from the first week flowed from the unique problem which students are actually living through.

TABLE 2

Y2K Software Solutions: Gain 2 Turns
replace
window
encapsulate
expand
compress
work around
abandon

The primitive assumptions of the class dissipated rapidly, and the complexity and richness of this widespread problem became apparent. Of all three classes, the growth experiences and creativity of the members was superlative.

TABLE 3

Y2K Challenge Cards: Fail-Safe/Lose 2 Turns
faulty logical comparison produces a negative result
embedded system malfunctions
embedded date as record identifier results in sorting errors
end of file " 99" misinterpreted
leap year miscalculated: weekday erroneous
screens and maps not debugged
"00" misinterpreted

Students attempted build not only knowledge, but also wisdom into these games, and identified generic problems beyond Y2K: we have created systems we do not understand, that the problem of management accountability for technology failure is acute, and that the impact of litigation can be devastating. They showed that small businesses operate on margins which preclude optimal courses of action and place them in hazardous conditions, and that government lacks the legal authority and the expertise to address widespread technological failure. They portrayed the criticality of appropriate communications of Y2K constructively, to prevent a lack of preparedness on the one hand, and panic on the other. Almost all the teams perceived the year 2000 as a technological, political, economic, and cultural phenomenon: an event with ambiguous dangers which promoted opportunities and posed threats on unprecedented breadth Table 4).

TABLE 4

Government Remediation: Advance 2
legislation: Y2K software fixes not patentable
due date moved forward to March 1: W-2 forms
due date moved forward to May 15: IRS
litigation: punitive damages limited
SEC disclosure guidelines lenient
insurance premiums capped
FEMA alert
Federal Reserve increases cash reserves
Chambers of Commerce offer Y2k consulting to small businesses

TABLE 5

Opportunities and Threats
bottled water vendor: advance 2
flashlight battery vendor: advance 2
dried food vendor: advance 2
COBOL consultant: advance 3
firewood vendor: advance 2
weapons vendor: advance 2
hacker enters your system: lose 3 turns
utilities and transport brownout: lose 1 turn
utilities and transport burnout: lose 2 turns
utilities and transport meltdown: lose 4 turns

The information systems curriculum will be poorer without Y2K. Models which the students constructed led them through a brief review of programming, mini-cases in systems design, and cost-benefit analyses in areas such as legacy systems. Moreover, in their research, on utilities, transportation, banking, manufacturing, or medical services, students studied enterprise sets as systems and gained a more holistic understanding, in turn, of the value of information resources to systems in the 1990s.

CONTEMPORARY ECONOMIC CHANGE IN RUSSIAN AND EASTERN EUROPE

Much of the material for this course was, at first glance, structured and traditional: historical analyses, political history, and comparative economic data. However, in addition to ongoing news about economic and political crises in Russia since August, 1998, numerous components of the issues required students to reach beyond traditional approaches. For example, one theme which the class investigated, was the competitive advantage of small nations in the 1990s, and the concomitant proposition that size, military power, and even significant natural resources may be a detriment to economic development, flexibility, and cohesiveness. Another theme was the direction of international investment away from Russia after her default on foreign loans in the summer of 1998. What did investors perceive as the opportunity costs of investing in Eastern Europe and Russia, in contrast with more stable areas such as Mexico, Malaysia, Iceland, or even Uganda. We also raised the questions:

"Do investors matter? Do developing economies need direct or portfolio foreign investment for prosperity and stability?"

TABLE 6

Russia

proliferation of political parties
war in Chechyna unresolved
oil prices decline in the 1980s and 1990s
IMF loan of $28 billion delivered
currency devalued, inconvertible, and unstable
investors withdraw capital and turn to South American developing markets
brain drain
corruption
unfair and inefficient tax system
lack of commercial law
military overhead: universal conscription

One of the strengths of the games was that students compared and contrasted nations within Eastern and Central Europe, to understand deep economic, historic, and cultural differences which are often glossed over, between Latvia and Bulgaria, for example. Although the information, strategies, actions, and outcomes were satisfactory, these board games were more similar to each other than those in International Information Systems or in Managing the Year 2000 Millennium Bug. Table 6 provides examples of key variables which were put into play with various penalties and bonuses attached.

INTERNATIONAL INFORMATION SYSTEMS

Board games in this course reflected the necessary melding of material from international business and information systems. The challenges flowed from these ten environmental factors: political, technological, economic, financial, physical, legal, labor, infrastructure, cultural, and ecological (Table 7).

TABLE 7

Uncontrollable factors: examples which affect international information resources

political: barriers to market entry
technological: inadequate telecommunications infrastructure
economic: lack of sufficient per capita income to support sale of upscale workstations
financial: lack of stable exchange mechanisms
physical: humidity armful to hardware, special handling required
legal: inability to enforce contracts
infrastructure: poor education resources affects quality of labor
labor: union activity, continuous retraining and placement problematic
cultural: software must have bilingual interfaces
ecological: Green Party monitors disposal of waste products from chip production

However, the teams examples of these challenges diverged widely, and were often whimsical and humorous.

The play often centered on market acquisitions, partnerships, and systems redesign. For example, if players encountered quotas and other non-tariff barriers, they had to abandon direct trade and direct investment, and choose between portfolio investment or indirect trade to reduce risk in some games. In others, opportunity and risk cards contained a number of variables, such as the Year 2000 Problem, cost-savings through outsourcing, a reduction in transaction or exchange risks, or data privacy laws which hindered cross-border data transfers (Table 8).

TABLE 8

Competitive Strategies through International Information Systems
transfer pricing
joint ventures
exchange risk hedge
transaction risk hedge
outsourcing
offshore data conversion
excess telecommunications capacity: profit center
investment in local education
language translation systems
information discovery tools adapted to local information resources
Y2K: legacy system replaced
knowledge-based system shared with NGOs for cooperative project
quality (customer focus) congruent with cultural values
GPS: thematic mapping for coastal and littoral development

The next time board games are used in this course, the class should study materials and tools with which to assign value more appropriately to market share, infrastructure components, labor costs, and other variables. Otherwise, the games captured the complexity of international systems, the broad range of management structures and strategies from which to chose, and the changing global business environment.

GAME THEORY AND BOARD GAMES

Board games cannot incorporate statistical analysis, movement toward equilibrium, and simple choice mechanisms that electronic and traditional business simulations offer to students. Game theory presents more rigid but less complex and dynamic models, and play is conducted, typically through a progression of instructive" if...then" statements. Game theory strips problems of sub-components, with no-fat, black-boxed models to identify some important answers. The purpose, presentation, and outcome contrasts sharply with board games.

CONCLUSION

Student-authored board games identify the most important questions in a field, force teams to develop models loaded with sub-components, and add layers of ambiguity and complexity to scenarios in which Nature, rather than individual choice, holds disproportionate power. Here, and in other areas, board games frequently differ from and professionally-authored business simulations (Table 9). The students' games generally lack the simplicity and clarity of purpose of commercial simulations. Also, board games lack the speed, elegance, and ease-of-use of electronic games.

TABLE 9

Board Games	Game Theory: Business Simulations
purpose: identify the most important questions	purpose: seek answers in discrete exercises
create models	utilize models
test and retest models	experiment with 1 of 2 choices: "if…then" logic
layers of complexity	black-boxed simplicity
ambiguity	stripped of subcomponents
leading role of Nature	players determine course of action
broad variety of variables and scenarios	scenarios structured
outcomes uncertain	outcomes instructive
game itself may fail	rules provided and unamended by students
tean-authored	
humor, whimsy, wit, and craftsmanship	

However, board games empower students to collect and communicate data, think carefully, experiment, slowly add layers of complexity, reject incongruities, and test repeatedly. Models are decidedly singular and imperfect, but also instructive and precious. Board games can be fine-tuned week after week, but students learn that they can capture fully neither complexity nor fluid situations. Students also confront problems of quantification, of assigning value to strategies, opportunity costs, market share, or technological leadership. Multiple linkages between variables are impossible to construct adequately. Through these failure, and through the opportunity to create rather than to receive games, they identified most of the important questions in each field and gained an appreciation for change and complexity, especially in dynamic and multidisciplinary fields.

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INTERNATIONALIZING WOMEN'S STUDIES USING CREATIVE, INTERACTIVE, CRITICALLY REFLECTIVE, AND CULTURALLY RESPONSIVE TEACHING AND LEARNING

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Abstract

Addressing cross-cultural research, teaching, and learning in higher education has critical implications for the inclusion of multipie perspectives within institutions of higher education [Rodriguez, 1995; Bensimon & Tierney, 1992-93]. The challenge to infuse the theoretical and practical issues takes on urgency considering demographic trends within the continental U.S.A. and the multicultural and international composition of the higher education faculty and student body.

The theoretical framework for this article is based on a comprehensive review of the literature on constructivist, critically reflective, and culturally responsive teaching. The researchers applied a multicultural conceptual framework for analyzing and assessing creative, interactive, critically reflective, and culturally responsive teaching in higher education. This research also advances the pedagogical knowledge base in higher education by identifying and documenting specific strategies faculty can utilize in their classrooms in order to promote creative, interactive teaching and learning in a cross-cultural, interdisciplinary curriculum. The teaching strategies introduce herein are aimed at assisting in the construction of a learning environment that allows and promotes the inclusion of multiple perspectives and reinforces democratic principles, sound pedagogy, and critical thinking.

INTRODUCTION

The case we chose for inclusion in the World Association For Case Method Research & Case Method Application (WACRA) Conference in Spain, Summer 1999 is use of a specific content, Internationalizing Women's Studies, within the context of higher education curricula. Recognizing the resistance in the United States to studying about other groups (alterity) and especially, about gender specific topics, it is imperative that unique and creative pedagogy be utilized. These teaching methods have been identified as high risk pedagogy. The use of creative, interactive, critically reflective, and culturally responsive teaching and learning will facilitate the engagement of students with a foreign content and the expansion of their thinking and worldviews. These teaching and learning strategies can serve as a model for university classroom teaching. This approach is interactive, student-centered and grounded in fostering critical thinking, self-reflection, social equity, and internal recognition of what is means to be a creative, critically reflective practitioner. This article presents a framework for a multifaceted, creative, interactive, student-centered, constructivist, critically reflective, and culturally responsive case study for the teaching of the content of internationalizing women's studies.

CASE: INTERNATIONALIZING WOMEN'S STUDIES AND CREATIVE, INTERACTIVE, CRITICALLY REFLECTIVE, AND CULTURALLY RESPONSIVE TEACHING AND LEARNING

The profile of the instructor in this case study is that of a Latina professor who is in her fourth year of service on a tenure-track line. She is in her early forties and is a graduate of New York University with a PhD in history. This professor is a member of the history department at a state regional comprehensive teaching institution in the northeast region of the United States. The actual course highlighted in the case study is that of the History of Latina Women.

Dr. Gonzalez Asencio was pleased to be teaching a course that was cross referenced with the History Department, Latino Studies, and Women's Studies Programs. The course also fulfilled a multicultural elective in the general education cluster. Such a course attracts students with a variety of interests from several academic disciplines. This course also presented Dr Gonzalez Asencio with the opportunity to use a creative, interactive and interdisciplinary approach to teaching the course content.

The students at this regional comprehensive university were primarily white, first generation to college, lower middle class, mostly suburban, some rural, and a few urban. There were more residential than commuter students in this suburban located university, since public transportation was scarce. In this class, the gender ratio of students was 80% to 20% female to male. The majority of the students (16) were taking the course as a multicultural elective, with some Women Studies Majors (6), and for the remaining (4) students, this course was a requirement of the Latino/a Studies Program.

The course met twice a week during a sixteen week semester. Guided self-discovery, reinforced by in-class discussions, media presentations, critically reflective journal writing, and computer assisted instruction enhanced the curriculum. In order to improve cross cultural skills and intercultural understandings, Dr. Gonzalez Asencio had developed a series of activities requiring critical reflection on the part of the students. She had been able to include various assignments using telecommunication technology (a goal of the curriculum) to learn about the beliefs, behaviors, and values of persons from other cultures as well as from one's own culture.

In most activities, Dr. Gonzalez Asencio encouraged interactive participation, cooperative learning, multidirectional learning, critical thinking, and critical reflection. She was as eager to learn from her students as she was to have them learn from her. Dr. Gonzalez Asencio made sure to model the culturally responsive teaching strategies that support a variety of individual and cultural learning differences.

On the first day of class, the professor came in, greeted students by name from the roster, smiled, distributed the materials on her desk, had students sit in a semi circle, allowed them to call her by her first name and encouraged turn taking by having students state their names so the class would get to know each other quickly. As an initial ice-breaker, Dr. Gonzalez Asencio had the students share aspects about themselves and find areas of commonality and difference among themselves. This autobiographical introduction to the course and to the specific type of content (international women's studies) served to help students de-center and understand others.

The second key activity in introducing a means of dealing with high risk content such as gender studies, is that of the Cultural Moments (Rodriguez/Sjostrom, 1997) designed to have students consider a moment in which they have been the single representative of a particular group (gender, social class, religion, etc.) and to recall how they felt and dealt with the situation. These two activities helped the group bond, be sensitive to each other's differences and experiences and to be more open to multiple perspectives related to women's studies and cultural diversity.

Throughout the semester, the pedagogy utilized in this class was based on critical reflection, confronting one's assumptions and views, and exploring multiple perspectives. The theoretical constructs for framing the study and discussion were: (1) constructivism; (2) alterity; and (3) critical reflection; and (4) cultural diversity. Student products for the course include small group discussion and activities, weekly reflections of course readings/discussions, the cultural moments activity, film reviews, oral histories, and cultural identity essays.

There are several obstacles encountered in teaching high risk content such as women's studies and international perspectives using high risk pedagogy. These include obstacles related to student resistance to the content itself and to the alternative teaching strategies other than lecture. For example, there tends to be resistance on the part of students to: (1) a non lecture, interactive, hands on approach to learning; (2) hearing peers' perspectives as well as instructor's; and (3) learning about specific gender related issues and about people from other cultures and worldviews.

In addition to student resistance, there is also resistance on the part of faculty who consider research on women studies within their disciplines (such as sociology, physics, or economics, and so forth) as non-mainstream. Institutional racism, sexism and other isms also marginalize this type of content as less then a legitimate part of the academy. In spite of obstacles to studying content about others in a non-traditional teaching mode, this type of course tends to be perceived by students and the faculty teaching it as stimulating, intellectually rigorous and critical to an understanding of the complexity of contemporary U.S. society.

Following are a set of guide questions for faculty use which are cross-referenced to the content of internationalizing women's studies at the post-secondary level. These questions are geared toward raising an awareness and developing strategies for overcoming obstacles to teaching a high risk content area. The questions include:

1. What kinds of learning activities do you feel foster openness to high risk content?
2. What obstacles do you encounter in learning in high risk content areas?
3. What role does student autobiographical reflection play in facilitating encounters with high risk content?
4. What role does case study method play in teaching high risk content?
5. How can you use a case study methodology for teaching high risk pedagogy?
6. What activities/strategies have worked for you in teaching high risk content?

ACTIVITIES FOR EXTENDING THINKING

1. Discuss with female students and students from other cultural groups their assessment of the degree to which history courses they have taken are free from bias and compatible with their styles of learning. Summarize key findings in writing.
2. Repeat activity 1. with students from mainstream U.S. American groups and compare responses to those of non-mainstream students.
3. Design a classroom activity in which students examine curricula, question the curriculum developers about the degree to which they address cultural and gender differences. Summarize your findings in writing and graph so that these findings could be used in future classroom activities.
4. Identify and list key insights related to the teaching of women's studies using creative and interactive pedagogical strategies.

Crosscultural approaches to research and teaching in the process of internationalizing women's studies requires a comprehensive intellectual design, philosophy, and attitude. This conceptual framework to teaching includes pedagogical pre-conceptualizations, critical reflection, and culturally responsive pedagogy on the part of the faculty in order to explore the complexities of the world with students. Teaching and learning in this manner facilitate the development of critical thinkers with multiple perspectives.

To accomplish these goals, we discuss the nature of teaching practice as it applies to the specific content area of internationalizing women's studies, and a target audience of North American college students. We also examine problems and principles of effective practice, the process for developing an inclusive syllabus, and general and specific strategies for teaching and assessing the same. We are keenly aware of the complexities and diversity of the teaching and learning processes, and the fact that there is no single "best practice" for facilitating the acquisition of this knowledge. Excellent teaching is highly dependent on the contextual nature of the content and instructional strategies, as well as on the particular experiences and needs of the learners. Thus, it entails more of a constructivist approach and goes beyond a prescribed or scripted fixed set of mechanical rules and behaviors.

Piagetian psychological constructivism describes learning as a process where the learner cognitively mediates the new experiences or knowledge (new to him/her) in order to create a personal logic and meaning. A constructivist approach to teaching leads the learners to higher levels of understanding and analytical capabilities. For example, a constructivist approach in the teaching of history would have students consider and examine the nature of historical inquiring and the modes of generating knowledge that are characteristic of the discipline. "In order to reach these higher levels, students must be actively engaged in reconstructing their existing understandings by restructuring their cognitive maps" [Richardson, 1997, p.5]. In other words, unless the learner deconstructs and confronts his/her current knowledge and understanding of the world, he/she cannot reconstruct based on new evidence and insights.

Critically reflective and culturally responsive teaching and learning are more than simply the transfer of knowledge from faculty to student. This form of teaching and learning requires the student to critically analyze various perspectives and worldviews, construct an understanding in their body of knowledge and conceptual framework, (equilibrate and accommodate in Piagetian terms), and use their new insights to address the inconsistencies they discover between theory and reality and thus must confront in reconstructing their thinking and action.

Faculty members need to encourage critically reflective and culturally responsive teaching and learning that contributes to students' empowerment and to an openness to multiple perspectives. We define reflective teaching as "...making rational and ethical choices about what and how to teach and assuming responsibilities for those choice" [Ross, Bondy, and Kyle, 1993, p. iv]. In a review of the literature on critical pedagogy and reflective teaching, Rodriguez [1996] concludes that: "reflective teaching is a process requiring the practitioner to have a particular set of attitudes and abilities which include: 1) an openness to the cognitive and social construction of learning; 2) the active role of the learner in constructing meaning; 3) an openness to multiple perspectives; and 4) building on the learner's background knowledge and experience in promoting critical thinking and learning. These characteristics influence the quality of teacher reflection and the set of criteria teachers use to evaluate their decisions" [1]. The strategies presented in this document are geared toward the above view of learning as it relates to the cultural, historical, and socioeconomic experiences of women throughout the world.

Preparing specific curricula to teach about international women's themes involves some degree of acculturation and consciousness raising for both faculty members and students. This professional introspection "may change the way one thinks about teaching, the relationship between teaching and learning, and the profession of teaching as work" [Putman and Burke, 1992, p.85]. The process entails the examination of certain concepts and practices that have been particularly detrimental to members of traditionally disenfranchised groups. Critical thinking and problem solving are cornerstones of the process. Brookfield [1990] has summarized such learning activities succinctly when he states that "...an educational activity is successful to the extent that it encourages people to think critically" [200]. Faculty and students, alike, will need to confront their assumptions, knowledge, and conceptual framework in exploring content matter about women from an international perspective, given the multiple subaltern conditions they face, such as being women of color and economically disadvantaged members in most societies.

PROBLEMS OF THEORY AND PRACTICE

In describing faulty generalizations within the Western intellectual tradition as one of the root problems in philosophy Elizabeth Munich, [1990] notes that, "It is very strange to maintain that one small group of people is simultaneously the essence, the inclusive term, the norm and the ideal for all [39]. Making faulty generalizations is a process that goes beyond the discipline of philosophy into issues of how knowledge is constructed and disseminated within the disciplines, and into pedagogy itself. The universalizing and homogenizing tendencies of the Western intellectual tradition and its canonical practices have limited our knowledge about those groups who because of their gender, race, class, sexual orientation and/or ethnicity are not viewed as "normative" or as the main producers of knowledge. Research and teaching on internationalizing women's studies must employ an inclusive curriculum that reflect multiple perspectives and experiences, including subaltern ones, rather than just reflecting the ethnocentric and patriarchal norms of the Western tradition.

Most students in U.S. colleges and universities still know very little about other cultures and even less about women's history and culture in other societies. They are generally caught up in circular justifications of superior Anglo-European ethnocentric norms and traditions that have been reinforced in families, schools, and other societal institutions. Many of these students share the widespread notion that "...it is a moral flaw to be other than the defining few" [96]. Noticeably, this position undervalues the historical experience of subaltern groups, including women. The prevalent K-12 and postsecondary school curricula and those who use it, unintentionally confirm for students, "that those who have been excluded from the curriculum ought to have been excluded" [94].

As mentioned above, these fundamental viewpoints lead to the exclusion of many groups from the educational process and from the decisions related to what and who are included in the curriculum. Women and ethnoracial minorities are among those voices most underrepresented or undermined in the formulation and interpretation of knowledge. Furthermore, their presence and participation in cultural, historical, and socioeconomic processes are generally absent or minimized.

PEDAGOGICAL PRECONCEPTUALIZATIONS RELATED TO CONTENT

In light of the issues raised above, a reconceptualization or revision of both content knowledge and pedagogical approaches is required by those conducting research and/or teaching about the subaltern "Other," in this case, women from all over the globe. Following is a set of pedagogical preconceptualizations for initiating dialogue about the planning and teaching process:

1. What are the underlying assumptions and values of the particular discipline regarding women from different cultures and societies?
2. In what ways has the recent scholarship on women throughout the world questioned, challenged, or modified traditional concepts, theories, and methods used in a particular discipline?
3. How can theoretical and methodological approaches be revised to incorporate the study of women from Western and non-Western countries into the humanities, sciences, and social sciences?
4. How is one's teaching practice influenced by the content itself, the students' background knowledge and/or experiences, and the multiple perspectives encompassed in critically reflective and culturally responsive pedagogy?

THE NATURE OF TEACHING PRACTICE

Critically reflective and culturally responsive teaching and learning require the cultivation and maturation of knowledge and the fostering of a complex collection of abilities and attitudes. But more important is the recognition that teaching is not and cannot be value free [Ross, Bondy, & Kyle, 1993, p. 5]. Hernandez [1994] notes that "teaching, to be effective, must be multicultural [3]. Putnam & Burke [1992] also agree that good teaching must embody multiple perspectives. Numerous researchers have stressed the multidimensionality of teaching and the fact the teaching practice occurs in a specific socio-political contexts. Hence teaching faculty "need to be able to analyze how they teach in terms of *what and whom* they are teaching" [Orlich, et. al., 1985, p. 2]. Rodriguez,[(1996] suggests educators need to develop a repertoire of pedagogical strategies, mastery and understanding of the discipline's canon and overall knowledge base, and an appreciation of who the learners are in order to be a critically reflective teaching practitioner. Moreover, they must be open to constant evolution, critique, and reflection. She further argues that teaching practice will change as the curricular content, the faculty, and the students are influenced by globalization and the needs of a more interdependent technological society.

The critically reflective and culturally responsive teaching strategies introduced herein broadly focus on facilitating student learning by: 1) organizing content knowledge for student learning; 2) creating a stimulating learning environment; 3) choosing an appropriate pedagogy for promoting learning.

ORGANIZING CONTENT KNOWLEDGE FOR STUDENT LEARNING

Mastery of subject matter and the ability to organize it in ways that are meaningful to students are central to the teaching/learning process and to critically reflective and culturally responsive pedagogy. To learn effectively students must understand the goals of a given course, specific objectives for each class, how they will be assessed, and the logic and relevance of the content in relation to their world. Faculty can scaffold the learners' understanding by utilizing the following guidelines:

1. Becoming familiar with relevant aspects of each student's background, knowledge, and experiences through journals, oral histories, class discussions, etc.;
2. Articulating clear learning objectives for each lesson that are appropriate to the students' knowledge and developmental level;
3. Demonstrating an understanding of the connections between the content learned previously, the present content, and the content to be learned, and relating the topic to students knowledge/ experience;
4. Creating or selecting teaching methods, learning activities, and instructional materials that are appropriate to the students and aligned with the course objectives;
5. Creating or selecting evaluation strategies that involve a variety of activities appropriate for the students and aligned with the course objectives.

CREATING AN ENVIRONMENT FOR STUDENT LEARNING

Students learn best when they understand the norms and expectations of the classroom. The culture of the classroom is created by the interaction between faculty and students and influenced by the disciplinary content. Faculty can foster an environment conducive to student learning by doing the following:

1. Creating a climate that promotes equity and fairness;
2. Establishing and maintaining rapport with students both in and out of class;
3. Establishing and consistently maintaining clear standards of mutually respectful classroom interaction patterns;
4. Communicating challenging learning expectations to each student.

APPROPRIATE PEDAGOGY FOR PROMOTING LEARNING

In order to chose an appropriate pedagogy for student learning "faculty must rethink their programmatic assumptions, philosophy, purposes, and goals to redesign curricula and instructional practices that conceptualize teaching in a culturally responsive manner as the norm rather than an add-on feature" [Rodriguez and Sjostrom, 1995, p. 3 1 0]. Faculty also need to be cognizant of the nature of the learning process when selecting appropriate pedagogy for internationalizing women's studies. Learning is a process that is active, volitional, and internally cognitively mediated, whereby the learner discovers and constructs meaning from information and experience. Each learner filters her/his perceptions through her/his knowledge base, emotions, and experiences. The curricular content for promoting the internationalization of women's studies, for example, is not one that is familiar to most U.S. college level students. Therefore, it is more difficult for the learner to create meaningful and coherent conceptual representations of the subject matter without cultural referents (context clues). Adding to the complexity of the process is the fact that learners organize information in ways that associate and link new information with existing knowledge, thus creating meaning. The more foreign the content, the more creative the instructor must be in order to motivate students and generate higher order thinking. Content strategies for internationalizing women studies may conjure stereotypes, biases, and even racism for some student. Faculty must be prepared for controversy and debate that ultimately facilitates learning!

IMPLEMENTING PRINCIPLES FOR GOOD PRACTICE FOR COLLEGE TEACHING

In 1987, Chickering and Gainson introduced *Seven Principles for Good Practice* based on extensive research and a view of undergraduate education as interactive and cooperative. These principles were subsequently adopted by the Association of American Colleges and Universities (AAC&U) and the American Association for Higher Education (AAHE) for the purpose of promoting excellence in undergraduate education. Thus, we will use the *Seven Principles* which provide a pedagogical framework for this essay. They are as follows:

1. *Good practice encourages student-faculty contact.* Frequent student-faculty contact in and out of classes is an important factor in student motivation and involvement. Knowing a few faculty members well may enhance students' intellectual commitment and encourage them to think about their own values and future plans.
2. *Good practice encourages cooperation among students.* Learning may be enhanced when students are given the opportunity to work in teams. This fosters collaborative efforts and not only individual competitiveness. Working with others also increases involvement in learning. Sharing one's own ideas and responding to other reactions improves thinking and deepens understanding;
3. *Good practice encourages active learning.* Learning is not a spectator's sport. Students may not learn as much just sitting in classes listening to teachers, memorizing pre-packaged assignments, and answering verbatim. They need to talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They need to make what they learn part of themselves.
4. *Good practice gives prompt feedback.* Knowing what you know and do not know focuses learning. Students need appropriate feedback on performance to benefit from courses. At the beginning, students need help in assessing existing knowledge and competence. In classes, students need frequent and varied opportunities to perform and receive suggestions for improvement. At various points in their college careers, students need opportunities to reflect on what they have learned, what they still need to know, and how to assess themselves.
5. *Good practice emphasizes time on task.* Efficient time-management skills are critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. How an institution defines time expectations for students, faculty, administrators, and other professional staff can establish the basis for high performance for all.
6. *Good practice communicates high expectations.* High expectations are important for everyone and tend to become self-fulfilling prophecies for both students and teachers. The latter also applies to low expectations.
7. *Good practice respects diverse talents and ways of learning.* There are many roads to Teaming. Students bring different talents and cognitive styles to the classroom. They need the opportunity to show their talents and learn in ways that work for them.

PLANNING FOR THE INSTRUCTIONAL PROCESS

Once the faculty member has become familiar with the course content, students' background knowledge/experience, and the obstacles to teaching a particular content, the actual course planning and development begins. We suggest the following eight step process to develop a course syllabus for internationalizing women's studies:

1. Identify and list content objectives for the course;
2. Generate a list of "key concepts" or "major ideas" to be covered in the course;
3. Prepare a statement which outlines your general viewpoints regarding this course content and your individual teaching philosophy and approaches (e.g. constructivist, lecture, cooperative groups, etc.);
4. Write a brief description of the course which covers general topics, anticipated outcomes, products, and assessment techniques;

5. List course requirements including readings, projects, reflections, and assessment techniques;
6. Develop study guides where appropriate;
7. Explain ground rules for classroom interaction including expectations, norms, participation structures, transitions, and conflict resolution.
8. Explicitly state your teaching philosophy, feminism, and position on gender, race, age, class, ethnicity, ablism, and sexual orientation.

The objectives and strategies presented in this article are introduced as examples rather than as being representative or exhaustive. They provide a blueprint for reconceptualizing and developing liberal arts and sciences pedagogy with content related to the internationalization of women's studies courses.

SPECIFIC GOALS FOR TEACHING CONTENT ON GENDER IN GLOBAL PERSPECTIVES

Even though the essence of a liberal education and the efforts to infuse gender and multicultural perspectives in the curriculum defy a consensus of texts and teaching approaches, they do incorporate a consensus of goals. These goals are particularized in terms appropriate to each higher education institutional context and mission as well as specific program objectives. Core curriculum planners in the *Cultural Legacies Project* of the American Association of Colleges and Universities [Schmitz, 1992] set goals for the study of particular cultural experiences. These goals were gathered from a variety of colleges and universities and while not exhaustive, they do "call attention to the importance of establishing purposes *before* designing curricula" [11]. We modified these goals specifically for the study of the experience of women internationally as follows:

1. To help both faculty and students overcome parochialism and transcend their own narrow sphere of experience;
2. To encourage students to develop a broad international perspective on the historical and socio-economic differences produced by gender and race;
3. To place the particular experience of women within a global context;
4. To develop in students the ability to "read" other cultures through the experiences of women internationally;
5. To develop in students the ability to see connections, contrasts, parallels, and interactions among various cultures through the study of women;
6. To foster an appreciation of the diversity of knowledge from a contemporary international women's perspective;
7. To increase students' sensitivity to issues of race, class, and gender;
8. To consider ways in which various social groups participate in the culture of their society and deal with women's issues;
9. To provide concepts and tools for understanding the social realities of women internationally;
10. To help students identify, compare, and evaluate concrete examples of their own cultural heritage via internationalizing women's study;

A major component of critical pedagogy is the assessment of learning utilizing a variety of strategies and measures. If one changes teaching practice to align it with critical reflection and a problem-solving approach, we must also change our assessment practices in the in the college/university classroom. Angelo & Cross [1993] propose hundreds of examples of classroom assessment techniques which more closely relate to the application of content in a more real-life situations. Too much of what is both learned and assessed in classrooms

Essays, Diaries, or Letters

For example have students read an essay by Luisa Capetillo or by another international woman writer. Then, ask the students to do a content analysisof its themes within the context of women's studies and workers' rights, feminism, and/or women's general status in society. It is useful to have structured guide questions for students from which they can analyze the texts.

Biography

Have students assume the position of an internationally notable woman in history. After reading about her life, have the students focus on a salient theme (e.g., women's involvement in political movements). Then have students select an article from a newspaper on the topic in question. Have them respond to the article the way they believe the person selected would have responded. Finally, have them write an editorial to the newspaper on behalf of that figure.

Immigrant interview

This strategy consists of a structured ethnographic interview with a female immigrant who came to the United States as an adolescent or adult. A series of structured questions eliciting information on the following areas is helpful: a) family background in country of origin including religion, socioeconomic status, education and occupations; b) reasons for leaving; c) the migration experience itself, d) expectations for experience in the United States; e) ways in which the experience was positive or negative; f) comments on the adaptation process in the United States; g) response from the student interviewer regarding the process of conducting the interview, including what was learned about the overall immigrant/migrant experience.

Photographic Essay

Select a theme (e.g. women in the garment industry, street vendors) and either collect or take photographs representative of the theme. You can choose a particular historical period or focus on contemporary society as a point of reference. Write a description of each photograph and an essay that explains the theme. Include a brief description of the theme, the context variables, and a summary and analysis of the events, findings, and conclusions.

Oral Histories

Select a published example of an oral history of an international female figure (e.g. farm worker, miner, garment worker), The oral histories are meant to sketch women's lives in the home, workplace, or community in order to provide a better understanding of their functions and experiences in their particular milieu. Study the format and content of the oral history. Then identify someone with extensive experience in a particular occupation and develop that person's oral history. Use a structured interview format to collect data.

Reflective Journal

Have students read materials related to sexism and prejudice over the course of the semester. Then have them reflect on materials using the following format: a) a brief summary of the content related to their topic; b) questions or ideas generated by the materials; c) any new concepts that surfaced from the materials; d) subjective reactions to the content; and e) comments on what they learned from the process of keeping a journal.

Timeline

Have students develop an historical timeline that traces the evolution of women's rights in a given country during a particular historical period (e.g. 1950s). On the titneline they will highlight major demographic trends, economic conditions, etc. To facilitate the projects, students should group issues by period or theme, conduct a content analysis of information gathered and decide what to include. Remember, timelines should represent history in abbreviated form.

Cultural Identity Essay

Have students write an essay on their own cultural identity using the micro-culture of gender. Define subjective culture and cultural identity as a framework for the assignment. Students will describe the impact of this micro culture on their development, describe any incidents of differential treatment they received which they perceive as related to the gender, and write an analysis of the impact of cultural identity on how they have evolved as individuals and members of a particular group.

Social Justice Meditation

Have students select the theme sexism and do a series of readings from newspapers or journals related to the topic. At three intervals during the semester, have students write a short essay in which they reflect on the selected topic. Encourage them to document both a specific domestic and international incident related to the topic. Provide a series of guide questions to facilitate the analysis and hold a class discussion at the end of the semester on the overall topic of social justice.

Participatory Video

Have students select a women's issue (e.g. labor practices, birth control, education). They will also select an agency that deals with this issue in the community. They will interview clients and personnel working in the area and do a video that illustrates agency services, interaction patterns, and how people feel about their particular roles. This technique has been used frequently in journalism and cultural anthropology courses.

CONCLUSION

In order to develop appropriate teaching strategies and revise curricula to teach content aimed at internationalizing women's studies, we must also examine the wider conflicting relationship between feminism, democracy, and diversity in U. S. society. The content knowledge, strategies, and ideas introduced in this article are geared at incorporating the voices and experiences of a particular marginalized group, international women, into the disciplines in the liberal arts and sciences.

Faculty in the U.S. are challenging traditional norms regarding content knowledge and pedagogical practices based on new research and scholarship emanating primarily from the fields of women's/gender studies, area studies, and cultural studies. According to Schmitz [1992] "Faculty are asking fundamental questions about what students should know, what they should know how to do, and what kinds of values and habits they need to develop for effective citizenship in a global world. Within this process, faculty are reevaluating approaches to western canons and redefining core knowledge to include learning about pluralism in the United States of America and other parts of the world" [6 1]. Hence, in this article we have attempted to accomplish the above goals by presenting a constructivist framework for linking specific content related to the cultural, historical and societal roles of women throughout the globe and to facilitate, multicultural and multidimensional, interactive teaching practices.

This kind of teaching and learning advances the process of internationalizing women's studies using critically reflective and culturally responsive pedagogy in the university classroom. It models a philosophy of education and teaching goals with respect to teaching/learning effectiveness by including these in written form in the course syllabus, teaching to them every lesson, and discussing them with the students throughout the course. This kind of teaching practice focuses on the students' development of thinking skills, valuing social equity, developing multiple perspectives, and constructing a repertoire of appropriate humane behaviors. It demands that the professor teach for student learning. This dictates high expectations and a well planned course organization. This creative, interactive teaching allows both faculty and students to monitor their own learning and discuss their personal assumptions and operational theories surrounding women's studies internationally. It requires the professor to model the "responsibility of the quest for knowledge" [Minnich, 1990], the kind of thinking that makes for possibilities.

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TEACHER EDUCATORS' DESIGNER TECHNOLOGY FOR UNIVERSITY CLASSROOMS

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Abstract

This paper summarizes an effort to bring technology into the teacher education classroom in an innovative way. Partnerships were formed between professors and graduate students. These partnerships worked together to tailor technology programs either for classroom presentation purposes or for supplemental computer work for designated courses. Two such programs are described.

INTRODUCTION

Technology for the classroom has been growing in its sophistication since film was introduced early in this century, followed by educational radio twenty years later, instructional television in the 1950s, and computers in the 1970s. Yet there remains considerable concern that teachers in classrooms have not changed to incorporate the latest technology and that, indeed, colleges of education are graduating new teachers with limited knowledge of technology and the ways it can be used in their classrooms [U. S. Congress, 1995; Fratianni *et al*, 1990]. A wide continuum of technological literacy still seems to exist in many colleges of education throughout the United States as Beisser *et al* [1997] chide by that, "the use of computers is pervasive in the personal lives of most college students, yet their professional preparation in implementing technology in education reflects only rudimentary levels of sophistication in most teacher training institutions" [p. 322]. The fear is that technology in college coursework will continue to have far too few faculty members who model usage in their classrooms [Handler & Marshall, 1992; U. S. Congress, 1995]. Indeed, there are faculty members ranging from those comfortable only with using a word processor or setting up a VCR to those who are extremely skillful with the multitudes of hard- and software available to educators and the general public. The latter, educators labeled as "technology whizzes," are sometimes set aside in subdepartments and may only have nodding acquaintances with other faculty in colleges of education. This may not be difficult to understand as one looks through the eyes of older professors such as Wilkinson [1997], a psychology faculty member, who describes candidly his fears and lack of understanding of technology as he began his journey to learn computer competency at age 50. Given the onset of computers in the 70's, many such professors did not have the opportunity of using a computer until they were older. Public and private schools today are seen as being "wired," but even younger professors may not have attended schools with technology available until college. Increasingly, however, technology is being mandated to be present not only in public schools but also to be modeled in colleges of education by such organizations as the National Council for the Accreditation of Teacher Education (NCATE). For such accreditation, it is required that technology be seen to be integrated into college of education instruction throughout preservice and graduate courses. Logically, skilled faculty and staff who model the latest technology in the university classroom should provide both the encouragement and norms for students, particularly for preservice teachers, to follow suit in their own classrooms after graduation. These new teacher-to-be, in turn, will be responsible for modeling technological literacy to their students as an important part of the world in- and outside of school.

Unfortunately, as noted above, not all college of education faculty are proficient with or knowledgeable about the latest in technology. It can certainly be a daunting task for faculty to stay current. Many faculty members may not have the time to design programs, even if interested. Schrum [1993] noted that, "Successful use of technology requires more than learning to use a machine, teachers need new ways of conceptualizing the teaching processes. We often speak of allowing children the gift of time for learning, yet educators are seldom granted that same gift" [p. 552]. The question then becomes concerned with ways that more faculty in colleges of education can move towards true integration of technology in their own classrooms, thus answering calls for more current university instruction with technology.

This paper will discuss two methods of how faculty members' and instructors were able to accomplish this. In addition, it will include preservice teacher reactions to having this technology as a part of their program. One way of answering the needs listed above was attempted with a small grant providing six hours of graduate work. Three hours of this coursework involved an introduction to bar-coding, interactive video, and other technology. Graduate students were also exposed to authoring programs such as Hypercard that allowed them to write their own stack programs and to repurpose videodisks for new interactive programs. After gaining these skills, graduate students were then asked to collaborate with a faculty or staff member to design programs. These would be completed for the following year's educational lectures and/or course work. Each consulted faculty or staff member received a program tailor-made and ready for his or her own purposes, while student participants were paid for graduate credit hours plus a small stipend. The use of graduate students as faculty technology mentors to increase technology integration in preservice courses has been well documented [Brewer, 1995; DeWert & Cory, 1996; Gonzales et al, 1997; Thompson, Hanson, & Reinhart, 1996; Thompson & Schmidt, 1994; Zachariades, Jensen, & Thompson, 1995; Zachariades & Roberts, 1995]. However, the partnership with tailor-made programs seemed to increase the potential that technology would be a part of these classrooms. Not only were graduate students helping to educate faculty on the technological construction of the programs but the professors were contributing knowledge to the theoretical area of good instruction for a program, instructional strategies, productive processes, and so forth.

One such example of the collaboration discussed above was initiated for an introductory undergraduate teacher education course and resulted in two finished technology programs--a bar-code lecture and an interactive video program. This introductory course called out for real and specific classroom examples rather than verbal description by a lecturer. Particular concern for these real examples lay in the area of teacher assessment/evaluation. It is often difficult for preservice teachers to understand how specific behaviors required for assessment can easily be incorporated into their daily lesson routines. It is possible for professors to script, then "act out" scenarios for demonstration in the college classroom, but it is never as effective as seeing real teachers in action coupled with reactions of their students. Neither is it very effective with a large class to attempt to discuss various situations seen by preservice teachers in observations. These descriptions often lack the details needed for analysis and time is limited for discussion, so the many varied examples brought to class by preservice teachers from individual observations cannot often be discussed in sufficient depth. A second concern for this introductory course is the time allotted for discussion on teacher assessment. So many critical issues are covered in this introductory course that teacher assessment is allotted only one lecture/participation period. Yet, students go from this course into student teaching where they are expected to know and perform the effective teaching behaviors listed on the university assessment instrument (which roughly duplicates this state's assessment instrument). In addition, first year teachers are assessed by many school districts on the behaviors listed and discussed in this course. Several questions emerged with these problem areas to be considered in the design process. For example, how could specific required teaching behaviors be made to be seen as realistically performable for teachers-to-be? How could instructors encourage retention and reflection for both the desired (and often required) teaching behaviors discussed in class (and student reactions to those behaviors)? Finally, was there a way to show value for these behaviors to preservice teachers?

BAR-CODE LECTURE

A bar-code lecture was one of the first programs designed for meeting the needs discussed above. In construction of bar-code lectures, a designer reviews disks of entire class periods which may or may not have been designated for other purposes (of which there are a number of commercial programs for educators). Sections of these disks are then selected that demonstrate distinctive behaviors for the context of a lecture. For example, for preservice teachers, a teacher giving a very effective focus activity can be isolated, the numbers of the footage designated, and a bar-code created through a special computer program. Specific scenes for other teaching behaviors such as providing a rationale for a lesson, logical sequencing, giving positive feedback, and so forth, can thus be isolated for easily playback. One advantage is that short scenes can be played and replayed quickly using a bar-code scanner as many times as needed to have preservice teachers understand the concept. Education students also may be able to watch the various subjects involved through multiply replays. First, for example, preservice teachers may be directed to concentrate on a teacher's actions. Then, during a second viewing, they might watch reactions of the students in the classroom. Access to these behavioral scenes is available as many times as the instructor "swipes" the wand across the bar-code.

The subject areas for this project's lecture uses scenes which, as noted above, demonstrate teaching behaviors needed for successful student teacher/teacher assessment in the classroom. At the end of the presentation, preservice teachers are given a blank student teacher assessment form. Then they mark their own ratings based on two longer lesson sequences. In the past with use of this program, preservice teachers exposed to this program and accompanying lecture have come, informally, very close to interrater reliability. In addition, they are more responsive and comprehending of their own performances in post conference discussions following their observations with a supervising professor.

MACASSESSOR

Another technological tool that answers special needs in the educational classroom is the interactive video program. These programs provide extended time for more involvement in topics. For example, during an introductory class in education, where time is extremely limited, they provide more information plus visual examples. These interactive sessions can be done outside of the classroom as enhancement/reinforcement, as in this project, or to introduce further information. An individual or small group can use a session at anytime. For this project, based on teacher assessment, it was seen as a particularly valuable tool to provide an additional mechanism to help preservice teachers enter their field placements in a more analytical and critical manner. By repeating usage prior to the beginning of practice teaching as a reminder of what behaviors were to be assessed by the college of education, it can help support education students with extra needed scenes from real classrooms along with questions and answers about teaching behaviors. Also, teaching in all levels of public schools is included, so that preservice students studying to teach in elementary, middle school, and high school have teaching situations to which they can relate. This is accomplished without an instructor.

MacAssessor is a game/program created, as stated above, as an interactive video instructional program (IVI), specifically designed for preservice teachers to aid in critical thought regarding appraisal. It simulates the role of an appraiser in assessment observations. This "game" allows a preservice student to become more familiar with the teaching behaviors stipulated by the University Student Teacher Appraisal Instrument and that of the state. It also offers the student a new perspective--a look from the assessor's eyes from the back of the classroom. Its creation supports Berry's [1994] statement that "interactive video makes it possible to increase the amount of active simulation teachers can experience while providing for great control over the nature of that experience" [p. 82].

Research on teaching and on the thought processes that allow computer programs to teach well was consulted, as design without theory would be of little value. Concepts as development of schema, perception, motivation, reinforcement, and so forth were examined and reexamined during the design process. For example, expert/novice literature notes that as experiences become more consistent and more predictable, information can be processed with fewer task-oriented categories [Carter et al, 1988]. Experienced teachers work from schemas developed from their past. Once formulated, a schema enables teachers to quickly recognize and interpret events and predict possible states and directions of activity more easily. Thus, managing a classroom with a minimum of information cues becomes easier for a skilled, experienced teacher. Formation of schemas is of concern to teacher educators because of the need for novices to develop situations they have seen before. Indeed, instructors have difficulties explaining certain schemas when their class is unable to see the same isolated teaching or student behaviors unless lab school observations are available for the whole class at once. One way to help, however, is programs such as this one that allow demonstration of isolated behaviors in the complexities of teaching within a context of the whole. By watching these, preservice teachers are able to translate isolated incidents more easily into routines. This is also helpful to self-efficacy. The self-efficacy aspect of interactive videos has been seen by several researchers to be an important area of thought that helps the learner [Clark & Sugrue, 1987; Salomon, 1984; Cronin & Cronin, 1992]. In this introductory course, for example, after an instructor introduces an evaluation instrument with its lists of multiple teaching behaviors required to be seen in a 45-minute lesson cycle, the reaction of the preservice teacher is often, "No way--I can't even remember half of those behaviors, much less do them!" However, programs such as this one allow the preservice teacher to see real teachers (multiple times, if necessary) executing these behaviors easily and effectively, adding to preservice teacher's schemas and belief that these behaviors can be accomplished.

A section on perception is another part of educational learning--that is, being able to see something only when a picture is viewed from a different perspective. Thus, perception was seen as one of the most important areas of development in this particular program. By asking preservice teachers to change perspectives--to that of an assessor, they step into another role, giving them the "ah ha" experience or, "Oh, now I understand what the assessor means when he/she says that a teacher doesn't monitor...or look at the students...or students really aren't getting anything out of this lesson. I can see that so clearly now."

Motivation, Nowicki and Strickland [1973] believe, occurs when children in schools can attribute success or failure to their own efforts, rather than factors over which they have no control. Motivation happens when they are the controllers rather than the controlled. This control factor correlated more highly than did IQ with success in school. Interactive programs such as this one are set up to allow our preservice teachers to feel almost completely in charge--that is, they may move to see a video again and they may check to see again why their thinking was or was not the same as an assessor. This program is also designed to let preservice teachers go along at their own pace, ask for help, and to stop completely and come back later or another day, if they so desire. The player controls the pacing of the information. This helps to lessen anxiety associated with "getting the right answer quickly" and, in addition, the anxiety some adults often associate with not being quick with computers. Relating to the "world of the learners," (preservice teachers) was another design factor dealing with the motivation factor. Many of the videodisks filmclip selections contain good teaching ideas which can be taken with preservice teachers into their own classrooms. Negative examples were clearly included as well, as it is also believed to be motivational for preservice teachers to be able to say, "Look at that! I already know better than to do that!"

Stimulus/response is another point in the design of this program. A feedback loop does not let the player out if the answer is incorrect without feedback. The player is unable to move on to the next scene he or she is given feedback for an incorrect answer, and the correct answer with feedback is then chosen. Also, the player is rewarded or punished with a "game show format" audio reinforcement. When selecting the correct answer, the computer rewards the player with a children's melody, and if the wrong answer is selected, another sound indicating failure is heard. Thus, both visual and audio feedback is offered.

Also considered in the design of this interactive program was the attention factor in learning. Filmclips were specifically selected to work from simple to complex. The program begins with players watching shorter and more simplistic teaching behaviors, then moves into longer and more complex behaviors for viewing and assessing. As clearly as possible, filmclip selections offer examples of the needed teaching behaviors. Comments given as reinforcement are designed to be at a collegial level rather than a profound, literate level to maintain focus and interest. Sometimes comments are designed to be humorous to help maintain attention and to keep the player moving through the program. This idea of interactivity coincides with Levin [1983], as he notes that these types of programs are the best of both worlds. They have overtaken the passive learning which TV alone provides in education and the boredom that the computer alone sits up with only the information with its immediate feed back. They offer both fun and feedback.

These examples of technology integration have several positive attributes. First, by engaging graduate student assistance, they are encouraged to become expert designers who will hopefully take these instructional tools into their own university classrooms. Next, we find that excellent interactive videos programs are already available for law schools, mechanical areas, and for science and medicine, but are often quite expensive. Most faculty may not have the financial ability or the desire to purchase such programs, if they exist, for the programs may not match purposes. However, tailoring technology to one's own educational classroom/lectures, whatever the classroom, is truly available now. Preservice teacher response is quite positive for these programs, as they report seeing real situations as most valuable, along with viewing their professors as up-to-date with technology. Finally, providing examples for preservice teachers hopefully answers mandates for integration of technology, but further, shows that technology can be easily designed to be a part of every classroom--including that of the education professor.

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LIBERAL ED MEETS HIGH TECH: INTERDISCIPLINARY COLLABORATION TO IMPROVE INSTRUCTION

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Abstract

We describe how our collaborative digital technology project assignment improves teaching and learning. Our model, funded in part by a Federal Improvement of Post-Secondary Education grant, pairs up a "content" class with a "technology" class, in a simulation of the contractor/client relationship. The "client" class creates information to be presented, and the "contractor" class renders as interactive multimedia [CD-ROM or website.) The "content" teacher gets help from the "tech" teacher in integrating use of the Internet, electronic presentations, e-mail, electronic forums and bulletin boards into their classroom routine. The students learn in context and by doing, rather than by rote.

INTRODUCTION

Technological advances provide practical means to shift the focus of classroom activities and assessment efforts from "student as knowledge consumer" to "student as knowledge constructor". Our paper will describe a model we are developing around the integration of technology into the teaching and learning process that implements such a shift. Recent research on teaching and learning provides a rationale for reorganizing lecture/discussion based classes to include project-based learning and team-based projects and provides impetus for the changes we are attempting to implement in our model [Schank, 1992].

A MODEL BASED ON COLLABORATION AND SIMULATION

Our model pairs up a "content" class with a "technology" class, in a simulation of the contractor/client relationship. The classes work to produce a digital collaborative project with the "client" class creating the information to be presented, and the "contractor" class rendering it in interactive, nonlinear form (CD ROM or website.) The classes interact and collaborate on the final look and contents of the projects. The teacher of the "content" class gets help from the teacher of the "tech" class in integrating use of the Internet, electronic presentations, e-mail, electronic forums and bulletin boards into their classroom routine. The teachers are provided with teaching assistants to facilitate communication between the classes. The collaborating classes have been scheduled at the same or overlapping times to foster face-to-face communication, and also run on different days where students meet electronically and share information by e-mail or Internet.

Educators approach learning situations with a variety of strategies, some effective, some less so. We assume that students working in teams will be able to learn and apply the skills they bring to the class in creating projects, though they often need to learn how to work effectively in active, team situations. We assume that by learning to learn, learning to organize information, and learning (or practicing) teamwork, and using a variety of technologies to communicate about shared work and project details, students will attain the discrete course objectives easily within a larger context of becoming effective learners [Schank, 1992]. Each class has some work that is integral to the shared project, and some that is independent of the collaboration. Thus the model can fit into existing courses, as it requires shifting and adding a few new objectives without scrapping existing objectives. Its flexibility is one of its strong points.

THE CONTENT PROVIDERS

The collaboration between Academic Computing and History at Columbia College began in the fall of 1997. Since then the two disciplines have explored ways to enrich the learning experience of students enrolled in both departments. The history class participating in this project was Women in U.S. History, which in the fall covered the colonial period to the post Civil War years and in the spring the late nineteenth century to the present. Clearly, however, the approach we developed could be applied to any history class and, in fact, to any liberal arts course.

From the history faculty's viewpoint, two main ideas were the inspiring force in this project. First, are the benefits of incorporating computer technology in the teaching of liberal arts. Second, is the potential for interdisciplinary collaboration. The results proved to be worth the extra effort that, at times, this experience involved. Both teachers and students gained a new, richer understanding of what a class can and should be.

The adoption of technology as an integral element of the history class has benefited the students in a variety of ways. Helping them become familiar with the Internet means making available to them a phenomenal amount of primary sources-letters, documents, photographs, speeches-as well as time lines, bibliographical information, etc., that they can use when doing research. For instance, by simply typing the words "women's suffrage", a student has access to valuable sources of information about the lives of more than one hundred women who fought for the ballot, access to pamphlets and other artifacts documenting the suffrage campaign, seminal material such as the Declaration of Sentiments and the written work of suffragists including Elizabeth Cady Stanton, Susan B. Anthony, Sojourner Truth and many others. The student can also follow a time line that traces major events in the struggle to achieve women's vote. Available too are bibliographies as well as pictorial images of a number of subjects.

As important as raising the students' comfort level with the Internet has been helping them develop a critical sense of what they found there. A search on, let's say, Clara Barton, will result in plenty of sites praising her role as a nurse in the Civil War and the founder of the American Red Cross. The picture that emerges out of this information, while not inaccurate, is superficial and incomplete, a stiff cardboard version of the controversial, real Clara Barton. Consequently, a class discussion on the limitations of the Internet can be as useful as one pointing out its possibilities.

Another tool that has helped enhanced the learning experience has been the use of e-mail. Asking all students to open an e-mail account has helped facilitate communication between the instructor and the students, and has proven particularly useful at Columbia College, a commuter school, where students are likely to be snowbound at least once a year.

The incorporation of a digital forum, which worked like a bulletin board for the two classes to discuss and share ideas, was useful and fun. It gave students a chance to post their comments, questions and papers digitally and thus encouraged participation and group cohesiveness. For the teacher it was an additional venue to reach her students. Questions about 19th century birth control devices, Victorian fashion, Jane Addams, pioneer women's diaries, African-American women's clubs were among those posed on the forum.

The joint production of a CD-ROM and Web site provided an accommodating, flexible, multidisciplinary arena that allowed the students' different talents to be displayed. This approach was well suited to an arts college like ours. Music, art, sound, film, etc. became for many students the natural entrance into the past. A student's interest in fashion can be directed to a study on the connection between clothing and sexuality in the 1800s. A theater major can record a reading from "The Feminine Mystique" or other relevant document. A film student can include a film clip of, for instance, Gloria Swanson to back a study on the 1920s alternative images of femininity. This multidisciplinary approach is not meant to replace the need for the students to sharpen their writing skills, but to find additional arenas to engage the students.

As significant for a student as the multimedia approach was the knowledge that their work would be on display to be read by others and not merely their teacher. This exposure gave students a sense of pride and a new reason to challenge themselves.

The computer skills that the students are asked to master when taking this history class are skills they will undoubtedly use in the future no matter what job they get. As an open admissions school in downtown Chicago, Columbia College student body is a diverse one with great disparities in terms of its access to resources. While some students own their own computer, others live in neighborhoods where the possession of a computer would put their homes at high risk of being burglarized. It is a mistake to assume that the solution to bridging this gap is to ignore technology in the classroom so that those students without access to it will not feel excluded. On the contrary, the greater the digital divide the greater the need to make sure that colleges provide all students with computer labs and technical instruction. Requiring students to get their own (free) e-mail address, for instance, will be an important step in making sure those students keep up with the new world of communication.

Throughout this project we attempted to keep a balance between individual creative work and teamwork. The students were given a framework to operate with -time period, citation guide lines, etc.- but they were encouraged to exercise their own initiative when choosing research topics. At times, we ran into problems because of this flexibility. Certain topics proved extremely popular. The Salem witchcraft trials or Victorian fashion come to mind, others important topics, on the other hand, were ignored. But despite this failing, it was important to convey to students the idea that they, not their teachers, were shaping the work. At the same time this project makes students sensitive to the need to explain their writing to others, to share their views, to agree on ideas, etc.

Not surprisingly, our collaboration was not always a smooth one. The first time we worked as a team, we tried to include too much information. The students were asked to produce eight short papers, the result of which was a tremendous amount of material for the faculty to read, edit, grade, etc. The second time we reduced the number of assignments to two. The students' papers were then more thoughtful but we concluded that for the purpose of our collaboration they were also too long and too few. There were not enough topics to make the digital material lively. The third time, we settled on four papers, and that seemed to work best.

Another difficulty had to do with time conflicts. We were not always able to schedule. The two classes at the same time which made the exchange of ideas problematic. We came to realize that digital contact cannot replace personal contact.

At times we also faced disagreements between the two groups in regard to historical interpretations. These disagreements were in fact a helpful learning tool for both sides. The technology students learned a useful lesson that they will likely face again in the future when their "clients" criticized some aspects of their work. The students in the history class, none of them history majors, developed a sense of ownership over the intellectual content of the multimedia project and felt confident to challenge the work of the technology experts when they perceived that it failed to represent a historic position accurately.

For the history faculty, the impact of this collaboration has been far reaching. It has resulted in the incorporation of digital technology in all her classes, encouraged a new openness to future collaborations with other disciplines, and, in general, inspired a commitment to take risks and explore unbroken paths in her teaching.

THE CONTRACTORS OR PRODUCERS

The "technology" classes that have been partners in the collaboration included CD ROM Multimedia Production, Courseware & Learning, Interface & Navigation Design, and Multimedia Producer. Each of these courses has a set of skill level learning objectives as well as higher order application, synthesis, and evaluation outcomes. In a sense these classes are "content neutral" as the skills and concepts students learn in the classes are ones they will routinely apply to a variety of subjects, topics, and purposes in professional life.

RATIONALE FOR THIS APPROACH

The projects provide an opportunity for students in both classes to engage in sustained perspective-taking. This is because students must consider the audience they are creating work for, their collaborators who have different goals and structures than they do, and how to make sense of work that was created by others. The metacognitive skills involved in thinking about what one is learning, and why, represent higher order thinking skills [Iverson, 1998.] Within a framework stressing meaningful learning which is exhibited in visible, demonstrable products (http://ddomain.colum.edu/fipse), specific learning outcomes related to skills mastery, comprehension, factual recall, and knowledge acquisition become part of an exciting educational flow or process [Csikszentmihalyi, 1993.] Work becomes play (McLuhan, 1995] Learning becomes a process, not a series of skill mastery steps.

Traditional educators fear that within such a process-oriented learning environment, students don't "cover the material" or they won't "learn the basics." However, this argument hides the fact that "the basics" of any subject are created by experts (often teachers) who attempt to decompose a process into discrete constituent parts based on their understanding of how they learned to do something. When the performances of novices and experts are studied, however, it has been noted that experts often have learned tasks so well they have in effect "compiled" some of the sub-tasks into routines they cannot deconstruct accurately [Jonnassen, 92] Novices and experts learn differently, so even when educators attempt to create a step-by-step, logical approach to a topic which they believe reflects the actual thing they are teaching, their approach can miss the needs with novice learners. This argues for a pedagogy based on learning by doing with improvement of skills and product through successive repetition or iteration.

Our model attempts to take learners from the contextual framework with which they enter the classes (either in the liberal arts class, or in the technical class) and through collaboration and simulation of a client/contractor relationship establish a learning environment which will promote knowledge manipulation, mastery, transformation, and production instead of simple knowledge consumption. As Dewey points out "[H]aving had an experience of the meaning of certain technical processes and forms of skill, there develops an interest in skill and "technique": the meaning of the result is "transferred" to the means of its attainment. [Archambault,1974.]We acknowledge that students in the collaborative, teamwork project classes will have differential learning outcomes, and master individual skill sets rather than a single set of class objectives, but we assert this is always the case in educational settings, and that it does not rule out a shared set of learning objectives. During the 20th century with its societal paradigm of industrial and assembly line production, students were mass-produced by an education system that was like a production"line" which modified them by increments until they emerged a completed "product" at graduation. Learning is the labor of the 21st century and education must provide opportunities for students to acquire knowledge, while learning to filter, organize, transform, and translate information by actively manipulating information, not reading or hearing about information. "Learning to communicate, function with others, and reason are thus the most important parts of any curriculum. Although it is our view that these subjects should not be taught directly, this does not indicate their lack of importance. Everything we design must have these properties [Shank, 1994.] The social aspects of our simulation that arise from the interaction of the individuals in their teams, and from the interactions between "clients" who are supplying the content, and "contractors" who are forging it into a "story" or presentation, are subtle but crucial to the success of the model.

THE ORGANIZATION AND LOGISTICS OF THE SIMULATION

In setting up the simulation, we discuss that in professional settings, especially at the outset of their careers, the students will not have control over the topics they will render interactively, but they will have major design and organizational responsibilities for "information engineering" in any given project. When working with the Women's History classes as partners, male students may initially question their role or the validity of the topic for them. Men and women may say they are just not interested in the topic. These arguments are discussed. Students are asked to recount incidents when they have been the "other" in a social group. Likewise, we recount when we have been part of a group where there have been those considered the "other." We further discuss the myriad of jobs in advertising, media and other businesses where students will be asked to produce colorful, exciting presentations about topics which may not of direct personal interest to them. In the simulations students have accepted the premises of the simulation and the rationale for the content choice.

One of the things that makes the model simulation work, is the ability to produce nonlinear, not time-based, modular information "packets" which can then be linked together through digital navigation in any sequence. This frees the participating classes from the need to progress in lockstep as they work during the semester. In traditional media forms (books, films, speeches) the linearity of the medium forces the information designers to work in a fairly linear way with the content providers, constraining team participants into a fixed and coordinated work schedule.

Interactive digital new media forms, such as CD-ROM, web, or kiosks, require a new understanding of how the viewer/user, or v(user), makes sense of information. Ideas and concepts are created as modular information packets. The connections of links that are pre-visualized between the packets are part of the presentation of the information. In traditional media, the links are explicit and set by the media's producer and the structure of the media itself (paging in the codex book, progression of frames in a film or video.) The bias of traditional media puts the information into a linear, unidirectional, flow of information and discourages skipping around or a self-directed inquiry by the v(user.)

Our interactive digital, non-linear productions our classes resemble theater productions because they can be developed scene by scene, and not necessarily in the order in which they will eventually be enacted for the audience. The scenes or "packets" hold together and are built up as it is convenient or timely, while the final scaffolding(navigation links) can be put in place iteratively, and not completed until the end of a project. Our successive iterations are analogous to rehearsals in theater productions. Trying to schedule two college classes, the teachers' schedules, the assignments, and whatever out of class meetings and work students need to accomplish is difficult. Having the advantage of modularity in content development, and being able to work asynchronously because of the properties of new media allows these simulation projects to be completed without a complete restructuring of the curriculum and scheduling practices.

A major cognitive problem or challenge for students is to conceptualize what nonlinear, interactive information design and presentation is. The linearity inherent in time-based media gives way to meaning constructed between producer/writer and the v(user] which toggles between traditional comprehension of information within an information packet, and the links and navigation or connections between modules. Meaning is negotiated by assimilating the information in a module or packet, and the subsequent choice of navigational direction. For example, in a traditional approach, the teacher might introduce vocabulary prior to studying a passage with the aim of making the learning direct and easy (no need to digress to look up unknown words.) However, with this approach, readers who already know the vocabulary are subject to redundancy and those who do not understand the vocabulary easily are hindered in understanding. In a new media approach, teachers can implement a "just enough" and "just in time" approach by putting links to vocabulary words in a new media work, and thus under the control of the v(user) making the experience more authentic. "The key idea here is to embed instruction inside a student-developed need-to-know. When students want to know something to help them in a task they will be determined to learn what they need to know if their motivation to accomplish the task is strong enough in the first place" [Schank, 1994.]

EVALUATION

An obvious method of evaluation of this model is to look at the projects produced by the classes. Historians or other subject matter experts can judge the content of the projects. Technology experts or aesthetic critiques can be used to judge the way a project "works" interactively. The samples we have included will allow you to see how this kind of evaluation of the projects was done, and allow for judgment of our work in one vector.

Another method of evaluation that is natural in teaching, is the assessment of skill or knowledge acquisition outcomes to answer the question "did they learn more from this approach to class than students learned in traditional settings?" Traditional studies of student achievement might use a pre- and post- test of knowledge of the subject to determine if a model program is educationally effective. In actual settings, this can prove difficult because there might be only one or two sections of a given course with 25 or fewer students. The possibility of locating control groups in a small college where there is only a single section of a given course also interferes with the effective evaluation process.

To assess the effectiveness of our model, we used a unique strategy to be able to identify control groups and to see if students were learning with our approach. We administer the Learning Environment Inventory questionnaire measuring six aspects of the learning environment we create (see below for description of the 6 scales.) This questionnaire has been carefully developed and studied so that we know which characteristics of a classroom learning environment are associated with increased student achievement in any class [Fraser, Anderson & Walberg, 1982.] If we try and measure student achievement directly, and then compare our classes, we will run into an "apple and oranges problem" -- how do we cómpare what students learned in Women's History, with what they learned in CD-ROM Multimedia Production? However, if we measure the "learning environment" we consciously create, we can make reliable inferences about what is happening with student achievement in our classes. For example, we know classroom cohesiveness (a feeling of being a team) and goal direction (everybody is clear on the team's "work") and student satisfaction are associated with subject-matter achievement gains. We will assess the learning environments of project classes and compare them with similar, but traditionally organized control-group classes to establish whether our team-based, collaborative approach is leading to higher student achievement.

The scales or aspects of the LEI include: cohesiveness (sense of being a "team"), diversity (extent to which differences between students exist and are provided for), material environment, goal direction (degree of goal clarity in the class), democracy (extent to which students share equally in decision-making related to the class), and satisfaction (extent of enjoyment of the class.)

Cohesiveness refers to how favorably students see themselves and their work as a team. Diversity reflects whether students with different abilities and interests are encouraged. The material environment refers to availability appropriate of books, equipment, and space. Goal direction assesses whether the students know what they are doing. Democracy measures the perceived student input in classroom decision-making. Finally, satisfaction gauges whether the students enjoy the class. These scales were selected to assess the fulfillment of the project objectives to improve cooperative and active learning.

At the time of press, we have only preliminary (pretest) results. The findings of the evaluation will be more fully reported at a later date.

CONCLUSION

Our paper has described a model of how to organize and carry out collaborations between diverse classes in a college setting for the purpose of incorporating participatory learning involving a simulation of a "client/contractor"and project-based learning into each class. We have used this model over several semesters, and we have listed some of the advantages we have discovered from this approach, as well as some of the problems we have encountered. Many students involved in the projects stated that they enjoyed learning this way, and often said this was the best history class they had ever taken. Our evaluation results will help us document whether this approach has cognitive as well as affective advantages over traditional approaches. We intend to continue to use this model, and are happy to note that when teachers have been involved in the collaboration they incorporate many of the techniques and teaching ideas in their subsequent teaching. This approach works well in our open-admissions institution and we believe it can be adapted to other settings and we look forward to working with teachers who are interested in this approach to teaching and learning.

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CASE METHOD FOR THE APPLICATION OF SPREADSHEETS IN COMPUTER ENGINEERING EDUCATION

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Abstract

The case method can play an important role in solving problems and in teaching problem solving and design in computer engineering courses. In this paper, a spreadsheet is used for the performance analysis of cache memory design in multiprocessor computer architectures. The topic of cache memory is an essential one in several computer engineering courses given at the junior and senior undergraduate level, as well as graduate level of electrical and computer engineering programs. In this paper, spreadsheet software is used to carry out performance evaluation studies on different cache memory design scenarios. Its low cost, flexibility and simplicity characterize the simulation. The suitability of this tool for educational purposes and its use in computer architecture courses are also addressed.

INTRODUCTION

For the past thirteen years, the author of this paper has taught undergraduate- and graduate-level courses in computer engineering. During that period, the author observed that while most students comprehend the basic concepts underlying the design of cache memory in multiprocessor systems, they tend to have problems relating the cumulative effect of the various parameters on the overall system performance. These parameters include cache size, block size, mapping technique, placement policy, and update policy. Accordingly, the author decided that an accurate, low-cost, user-friendly simulator for the performance evaluation of cache memory systems would be very helpful for students.

Simulators have been used over the past years for educational purposes such as that devised by [Diab, 1998], [Cutler, 1987], [Yen, 1986], and [Diab, 1991]. Furthermore, cache memory performance has been extensively researched, e.g. [Smith, 1987], [Laha, 1988], [Hill, 1989], and [Dubois, 1988].

The use of spreadsheet programs in solving engineering problems has proven to be an important tool for PC users who are not expert in computer programming. This provides the user with an easy environment to interact with for the simulation of specific systems. Some of the application areas include an educational tool for microprocessor systems [El-Hajj, 1995], linear programming [Kuo, 1987], analog computer simulation [Kabalan, 1997], causal filters simulation [Kabalan, 1996], high-level mixed-mode simulation [Saul, 1991], and partial differential equations [Lam, 1988].

SIMULATION OF CACHE MEMORY PERFORMANCE

The overall cache size and the cache line (block) size are the main parameters that affect cache performance. Excessively large or small line sizes can raise the miss ratio; also large line sizes have long transfer times that can lead to high levels of memory traffic. Some of the factors, related to the machine architecture, that influence the line size [Smith, 1987] include width of the memory modules and degree of interleaving, bus protocol, memory interference and memory busy time, the amount of storage required to hold the address tags when the line size is small, and line crossers between cache lines. The major effect of line size choice on the performance comes from its impact on the miss ratio.

In [Smith, 1987], trace-driven simulation was used to generate miss ratios for all cache sizes. A demand fetch, fetch on write, copy-back cache with LRU replacement and a fully associative cache was assumed. Due to the high variability of the miss ratios, the relative change in the miss ratio (r) as a function of line size provides a more stable measure than the miss ratio. Accordingly, r is computed as the ratio of the miss ratio for a particular cache size and line size to that for the same cache size but half the line size. In order to smooth out the irregularities of r, the *smoothed* r (R) is computed [Smith, 1987]. As a result, Figs. 1-3 provide the R-values as a function of the cache size and line size. Figures 1, 2, and 3 apply for instruction cache, data cache, and unified cache respectively. The data represented in these figures act as a sample input to the package to provide the user with values to use for estimating the performance impact of different design scenarios.

CASE METHOD: SPREADSHEET IMPLEMENTATION

Spreadsheets provide an easy-to-use environment for entering user-defined data patterns of the input parameters; and simulating the effect on the miss ratio and cache performance as a function of the line size and overall cache size.

MISS RATIO SIMULATION

Figs. 1-3 can be used to compute the miss ratio, for a specific cache size, for one line size from the miss ratio of another line size:

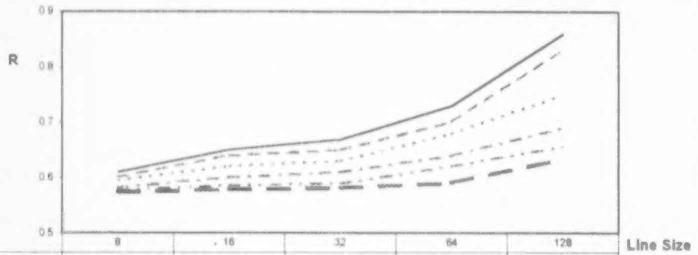
$$\text{Smoothed average of ratios} = R = \frac{\text{m at line size l}}{\text{m at line size } \frac{l}{2}}$$

Fig. 1 provides the input to the simulator showing the smoothed average of ratios (R) as a function of the line size (8 to 128 bytes) and instruction cache size (1 to 32 Kbytes). Fig. 2 provides similar R-values as Fig. 1 but for data cache and Fig. 3 for unified cache. Fig. 4 plots R versus line size for instruction cache, which can be derived from the above equation for R. For example, assuming that the first column (i.e. line size=l=4 bytes) in Fig. 4 are defined by the designer to act as the initial design target for the average miss ratio, the remaining columns can be regressively computed from the data given in Fig. 1. For example, for instruction cache size of 2 Kbytes, we have:

$$m_{(\text{at } l=8)} = R_{(\text{at } l=8)} * m_{(\text{at } l=4)} = 0.600 * 0.391 = 0.2346$$

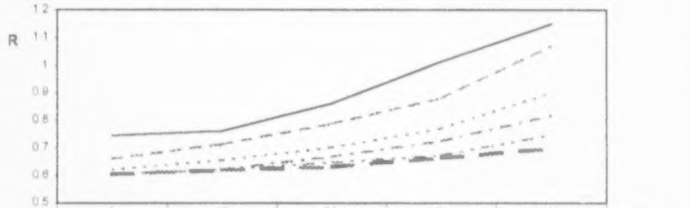
The miss ratio can now be computed for different line sizes as a function of different cache sizes. Figures can be similarly derived for data and unified cache respectively. The graphical presentations that can be facilitated to students, as shown in Fig. 4, provides the user with an easy way to interpret the results and study the behavior of the miss ratio for different cache and line sizes. It should be stated at this point, that the results obtained would depend on the design target data and the R data tables initially defined by the user. This will provide the user with the flexibility to choose different initial data sets that may correspond to various design scenarios for particular multiprocessor architectures.

FIGURE 1 - R VS. LINE SIZE FOR INSTRUCTION CACHE (CACHE SIZE=1-32 KBYTES)



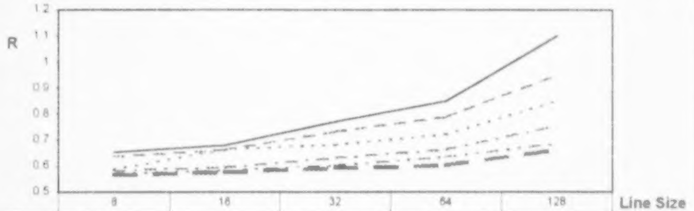
Cache Size	8	16	32	64	128
1 Kbytes	0.610	0.650	0.670	0.730	0.860
2 Kbytes	0.600	0.640	0.650	0.701	0.832
4 Kbytes	0.595	0.620	0.630	0.680	0.750
8 Kbytes	0.581	0.600	0.610	0.640	0.690
16 Kbytes	0.577	0.585	0.589	0.620	0.657
32 Kbytes	0.573	0.578	0.581	0.590	0.634

FIGURE 2 - R VS. LINE SIZE FOR DATA CACHE (CACHE SIZE=1-32 KBYTES)



Cache Size	8	16	32	64	128
1 Kbytes	0.744	0.760	0.860	1.015	1.150
2 Kbytes	0.660	0.711	0.787	0.880	1.071
4 Kbytes	0.619	0.654	0.700	0.770	0.900
8 Kbytes	0.603	0.620	0.667	0.723	0.817
16 Kbytes	0.602	0.618	0.646	0.672	0.747
32 Kbytes	0.602	0.618	0.630	0.662	0.697

FIGURE 3 - R VS. LINE SIZE FOR UNIFIED CACHE (CACHE SIZE=1-32 KBYTES)



Cache Size	8	16	32	64	128
1 Kbytes	0.653	0.680	0.770	0.850	1.100
2 Kbytes	0.636	0.660	0.731	0.787	0.950
4 Kbytes	0.586	0.662	0.680	0.720	0.850
8 Kbytes	0.581	0.593	0.630	0.661	0.753
16 Kbytes	0.569	0.581	0.600	0.633	0.685
32 Kbytes	0.564	0.575	0.590	0.601	0.660

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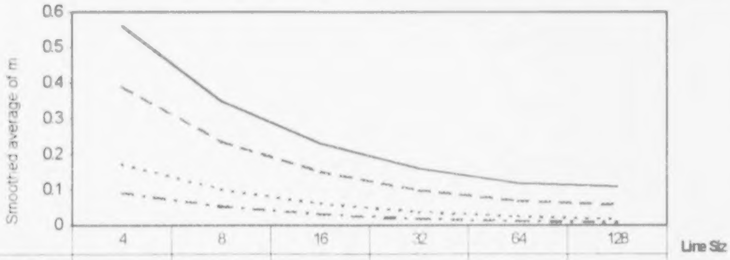
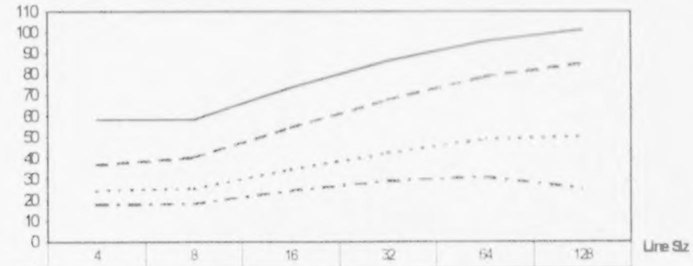
FIGURE 4 - SMOOTHED AVERAGE OF M VS. LINE SIZE FOR INSTRUCTION CACHE



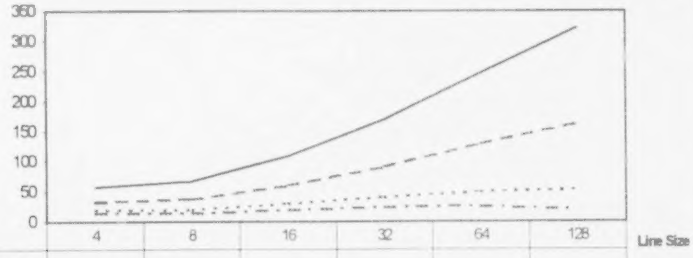
Cache Size	4	8	16	32	64	128
0.5 Kbytes	0.562000	0.348440	0.229970	0.158680	0.119010	0.108299
2 Kbytes	0.391000	0.234000	0.150144	0.097584	0.068413	0.056820
8 Kbytes	0.172000	0.099832	0.058869	0.036575	0.023408	0.016152
32 Kbytes	0.091000	0.052143	0.030139	0.017511	0.010331	0.006550

FIGURE 5 - MAXIMUM THROUGHPUT IN MIPS (M) IN MIPS VS. LINE SIZE FOR UNIFIED CACHE (W-T POLICY)



Cache Size	4	8	16	32	64	128
0.5 Kbytes	17.72	18.01	24.29	28.83	30.82	25.28
2 Kbytes	24.30	25.21	34.30	42.26	48.81	50.25
8 Kbytes	36.62	40.12	54.52	67.60	78.47	85.05
32 Kbytes	58.56	58.34	73.66	86.23	95.59	101.22

FIGURE 6 - MAXIMUM THROUGHPUT VS. LINE SIZE FOR UNIFIED CACHE (W-B POLICY)



Cache Size	4	8	16	32	64	128
0.5 Kbytes	12.58	12.82	18.37	22.83	24.92	19.30
2 Kbytes	18.38	19.25	28.80	38.89	48.77	51.17
8 Kbytes	31.55	35.99	58.87	89.57	128.15	161.69
32 Kbytes	57.06	66.58	109.09	168.89	246.47	322.29

THROUGHPUT SIMULATION

Bus bandwidth can also be the limiting resource in a multiprocessor computer system, and thus memory traffic is a very significant performance factor. Memory traffic may be estimated by multiplying the miss ratio by the line size to yield the traffic in bytes/memory reference. Memory traffic consists of two components: fetch traffic and write or copy-back traffic. On the other hand, the traffic in the other direction, from cache to main memory, will depend on whether the cache uses the write-through or copy back policy.

Another worksheet was, therefore, provided to study the influence of the line size on the bus bandwidth in a multiprocessing system. The worksheet provides the user with definitions of the terms used, description of the bus timing and information on throughput bounds for different scenarios. For example, the communication bandwidth (T) for a write-through cache with hardware-enforced coherence is given by:

$$T = (M * C_{rb}) + (W * C_w) + X_{io}$$

Whereas, the upper bound on the MIPS rate is:

$$Th \leq \frac{B_w}{D_r * (1 - H_r) * C_{rb} + D_w * C_w + X_{io}}$$

Where, M = total number of read misses per task executed
W = total number of writes per task executed
X_{io} = average number of bus cycles resulting from I/O per task
C_{rb} = bus occupation time for reading a cache block
C_w = bus occupation time for writing a word (in bus cycles)
H_r = hit ratio for memory reads
D_r = demand ratio for read references per instruction
D_w = demand ratio for write references per instruction
B_w = maximum bandwidth that can be supported by the bus(es)

The user can, therefore, use this worksheet to go through the definitions and equations pertaining to the bus throughput and can investigate the effect of the line size on the maximum throughput for different cache sizes. Fig. 5 shows one such option for unified cache assuming the write-through update policy is used. Furthermore, the user can investigate the influence of the update policy on the maximum throughput. Fig. 6 is similar to Fig. 5 except that the write-back update policy is used instead.

USE OF SPREADSHEETS IN COMPUTER ARCHITECTURE COURSES

This paper has shown the use of spreadsheets as a user-friendly simulation tool for the performance evaluation of cache memory, a topic that is addressed in both undergraduate- and graduate-level computer architecture courses. In addition to the use of the miss ratio and throughput as indicators of cache performance, a multitude of issues related to the design of cache memory may also be implemented. This may include testing the effect of the various placement policies (*direct, fully-associative, set-associative, sector mapping*), fetch policies (*demand, anticipatory, selective*), and replacement policies (*LRU, FIFO, RAND*, etc.).

In general, students reacted very favorably to using the package. Among the identifiable factors for this is that the package:

(a) Provide students with a dynamic graphics illustration of the simulation results. This clearly enables students to absorb and easily interpret the behavior of different case studies more efficiently.
(b) Permit more individualized instruction, which allows students to work at their own pace.
(c) Enable students to define their own data sets for emulating different R and m values for different cache-based multiprocessor systems.

CONCLUSION

A simulation analysis tool for the performance evaluation of cache memory in multiprocessor computer systems using spreadsheets has been presented. The analysis is available in the form of a spreadsheet program that allows the user to select specific parameters of the system and derive the corresponding performance of cache memory. The reported tool designed is motivated by the fact that a trend for using simple, cheap and user-friendly packages for system simulation is becoming more commonly used for educational purposes.

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USING A SOUTHEAST ASIAN EXPERIENCE TO CREATE AN IN-CLASS RESEARCH CASE: A VIETNAMESE MARKETING RESEARCH PROJECT

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Abstract

This case presents a Vietnamese student research project for an international appliance manufacturer that requests a demand analysis to determine the feasibility of building a factory in that nation. Students are challenged with how to design a valid sampling plan to provide a demand estimate. Cultural and analytical obstacles and their implications for the research planning process are discussed. Specific attention is given to defining the research population, constructing a sample frame, and drawing the sample.

INTRODUCTION

SETTING THE STAGE

The purpose of this paper is to share the challenges of Vietnamese students designing a research plan for an introductory marketing research class project in Hanoi. This experience is presented in a short case that represents the sample plan the students developed up to the point of faculty intervention. This case may be used in courses where field research is taught requiring the creation and understanding of sample planning. A teaching note is provided to suggest how the issues in the case may be addressed to provide for a sound sampling plan and to recognize obstacles to research planning in countries and cultures that do not have the Western research and business traditions familiar to most of our students. The case was designed to be discussed orally between the instructor and student groups in a question/answer process.

One of the international initiatives our marketing research faculty have participated in is teaching Vietnamese students who are enrolled in an American MBA branch campus in Hanoi [Napier, *et al.*, 1997]. Each student is required to prepare a major research project with direct business relevance to Vietnam under the supervision of our faculty visiting in Vietnam. Students worked with government owned enterprises, joint ventures, or branches of foreign corporations with offices in Hanoi. The case herein summarizes the situation a number of those students faced as they began their first marketing research projects. The client was an international manufacturer of appliances that the Vietnamese government had invited to build a washing machine factory in the country.

Broadly stated goals such as building a new factory to serve a fast growing market soon led students to discover the need to determine the economic feasibility of paying for that factory. Parent company requests for demand estimates, share measures, and image measurement provided exciting criteria for study. But, when the time came to collect the data, there was great confusion about how to conduct the surveys the students had designed. The classic sample plan issues that appear in all marketing research texts became major concerns for these students.

STUDENT EVALUATION

Three evaluation activities at the end of the case focus student attention on the issues that confronted the Vietnamese students:

1. *Define the population for this research project.*
2. *Describe how to determine a sampling frame for this research.*
3. *Evaluate potential sources of sampling error.*

THE PROBLEM AND ITS CULTURAL INFLUENCES

This case is about more than the basic issues of developing a proper sampling plan. It also introduces international cultural differences as variables that influence the process of developing a sampling plan. The increasing globalization of business activities requires greater exposure to the issues students may face as they work in other parts of the word' [Marer, 1998]. Southeast Asian business students and Vietnamese students, in particular, differ from American and Western European students in several respects. Distinctions which contribute to the challenges students face include the potential for not clearly understanding course material which is most often in English. Student English competency is rarely fluent, and English may well be a student's third or fourth language. Students are reluctant to ask clarifying questions, particularly in class where there is a potential to lose face. Students rely on instructors to provide a right answer rather than recognize the necessity to derive the "best" answer from concepts and models presented in class and readings. Respect for authority and desire to conform can inhibit original and creative thinking [Nevett, *et al.*, 1993]. These factors created mental roadblocks for the Vietnamese students as they developed their plan. Discussion of how these students should manage their sample plan helps our domestic students become aware of how underlying principles apply beyond their own domestic setting, but understanding of how to apply scientific principles is not universally consistent.

Not clearly understanding how to correctly define the population was complicated by nationalistic pride. The Vietnamese economy had achieved some notable successes including reaching self-sufficiency in food production. Dictionary translations of "population" do not focus on the research use of the word. Students knew the national population was 74 million, so they expected research results to make inferences in terms of that number. The research population required was to be able to estimate product demand, meaning those willing and able to purchase washing machines. Local management for the client business compounded the issue by suggesting the students cut back on the scope of sampling even further to save money. Reluctance to challenge management's suggestions or to seek the instructor's direction led to early acceptance of an extremely naïve and inadequate sample selection approach. The idea that the three-city sample proposed did not represent the entire nation was a difficult concept for them to grasp. When presented with this case in class discussions, many students in our school fail to recognize the same general sampling problem limitations, as well.

No easily defined source of a sample frame exists for the population of this project. No organization anywhere prepares lists of users or potential users of washing machines. In wealthier countries, researchers may reasonably presume that any respondent has sufficient income and access to utilities necessary to operate a washing machine. Therefore, any broad list of households could serve as a preliminary sample frame. Nearly everyone has a phone and may be reached through plus-one or random dialing processes. These assumptions and approaches do not hold true in less developed nations. Creativity is required to identify potential sources to identify the objective respondents. Although no list would be available for washing machine users, lists do exist for utility users. Because the Vietnamese government is interested in the outcome of this research and utilities are government controlled in communist nations, students have come to the conclusion that utility lists may be available from utility management. Acquiring these lists would require going through whatever permission process may be associated with working with government agencies in Vietnam. Fear of authority made it difficult for Asian students to consider this option. Students anywhere in the world should recognize the prospect that pre-existing sample frames are not likely to be readily available, and that creative energy may be required to develop their own lists.

Evaluation of sampling error, for both method and size, is necessary to complete question three. Choosing only a few prominent cities is a form of convenience sampling without consideration of how well those cities represent the entire population of interest. On the other hand, random sampling with small sample sizes may not be much more representative. This problem presents the opportunity to discuss the relative merits of probability and non-probability sampling methods. In this case, students were slow to perceive the need to sample outside the principal cities because those cities are where the people who matter live and it's "expensive" to do interviews. A form of arrogance inhibits elite urban students from recognizing the necessity for selecting a sample which is representative of the entire populations of interest. If cost limitations truly limit the research to a very small sample (below 30 per city and as few as 60 total), an argument may be made that a judgment sample could achieve a more representative sample than a random sample. While such sampling may provide useful information for image definition, few would accept non-probability samples for inference of national demand estimates. Small probability samples have large error estimates, which also would be unacceptable for national demand estimation. The Vietnamese students needed to communicate with the local manager to discuss the implications of small sample size on error and the value of the decision dependant upon the results and request a larger budget. Class discussion of the trade-offs relating to cost, error, and sample size and method can be very enlightening.

CLASSROOM MANAGEMENT

This case has been refined over three semesters of use as an in-class discussion exercise. Classes are divided into working discussion groups and given about 40 minutes of an 80-minute session to read, discuss, and prepare responses to the activity assignments at the end of the case. Then responses from each group are displayed for all to see, one question at a time. An additional benefit of in-class case discussion in small groups of mixed nationality groups is that the Asian students are often selected to speak for the group. This prevents them from falling into the unassertive role we often find Asians play in traditional U.S. group projects. As speakers for their groups, they may expand on group insights with their own experience and understanding. The instructor leads evaluation to discover the strongest points from the group responses. After complete coverage of each point, the next issue is discussed. Use of the case three times has yielded solid student evaluation and development of good sample plan design.

Past use of this case for in-class discussion has not generated calculation of confidence levels nor of accuracy implications accompanying the suggested sample sizes. In our course syllabus, sample size is covered after this case has been used. The teaching note provides those calculations for instructors who might choose to add that requirement.

CASE - POWERREX

After the end of the Vietnamese war with the United States in the 1970s, numerous Asian corporations entered the market to do business with the newly independent Vietnam. When Vietnam opened its economic system to *doi moi* (free markets with communist controls), foreign companies began exporting increasing quantities of brand name appliances to Vietnam. As the United States reduced sanctions to trade with Vietnam, PowerRex, a Swedish company, was encouraged to take advantage of the close economic cooperation programs the socialist Swedish government had initiated with the Vietnamese government. PowerRex is one of the largest multinational companies in the world, with over 600 sales branches and manufacturing facilities in over 50 countries. In 1993, PowerRex began exporting washing machines, freezers, electric and gas stoves, vacuum cleaners, hot water heaters, and air conditioners to Vietnam. By 1995, PowerRex had become an established brand name in numerous appliance segments in Vietnam. Regional managers believed PowerRex had established brand recognition for quality appliances.

Most appliances are considered to be luxury goods by the Vietnamese government and are subject to high import taxes. To encourage job creation and capital investment, taxes are dramatically lower for products manufactured or assembled domestically. In 1994, PowerRex opened an assembly plant for freezers in Nam Dinh City, located 87 km from Hanoi.

The domestic washing machine market had grown rapidly and included strong competition from Japanese and Korean brands. The available brands were all well recognized around the world. Japanese brands included Hitachi, Sharp, and National, which were known to be energy efficient but required a lot of water. Korean brands included Samsung, Goldstar, and Daewoo, which were seen as low price, low quality. PowerRex saw its washing machines as value priced for better quality through getting clothes cleaner and requiring less drying time by better spinning to reduce moisture content. Dryers were scarce due to high purchase prices, import taxes, and the relatively high price of power. Most Japanese and Korean brands were rebuilt machines which mixed used machines and parts with new components to be sold as "like new" in Vietnam. PowerRex and several other European brands were imported with all new parts. There are no differences in physical appearances other than styles. Although the United States no longer maintained an embargo of Vietnam, remaining trade barriers made American brands prohibitively expensive.

The Vietnamese government approached local management to inquire about the possibility of building a domestic production facility for washing machines, since all washing machines were imported at that time. The local Hanoi manager was enthusiastic about the possibility and recommended the action to the Swedish headquarters. The response from headquarters was to request a survey of the market to describe the size of the market, major segments, PowerRex's current share of the total market and its relevant segments, and their brand image.

At that time Vietnam had a population 74 million, the overall economy was growing at about 7 percent per year, and inflation was about 10 percent per year. While poverty was still a significant problem (GNP per capita was just over $200 U. S. dollars), demand for luxury goods had increased for many whose standard of living had improved substantially.

Not knowing anything about marketing research, the manager agreed to work with a student group at the National Economics University of Hanoi in a joint MBA program with an American university. The students proposed interviewing 30 to 50 owners of washing machines in each of three cities: Hanoi, the capital, a northern city of 3 million; Ho Chi Minh City (formerly Saigon) in the south, a commercial center of 8 million; and Hue, a scenic central city of 250, 000. Students recommended going to each household for personal interviews, which they estimated would cost about $2 each for incentives, since people are very reluctant to talk to strangers. The local manager was concerned with the travel and interview costs, so he suggested they reduce the number of interviews in each city and not include Hue, since it probably wasn't worth the effort or cost.

ACTIVITY

Evaluate the sampling plan.

1. *Define the population for this research project.*
2. *Describe how to determine a sampling frame for this research*
3. *Evaluate potential sources of sampling error.*

Note: This case was written for class discussion rather than to illustrate effective of ineffective research design. The identity of the company has been disguised to respond to their confidentiality concerns.

TEACHING NOTE - POWERREX

Case Objective:

This case requires students to apply sample design process steps to an international research setting. Specific issues include population definition, sample frame determination, and evaluation of potential sources of sample error.

1. *Define the population for this research project.*

Answer: Households with electrical power, water, sewage, and sufficient income/wealth. Specific amounts would be arbitrary estimates; if given, they should be reasonable.

Discussion: The population is defined as the entire group of interest as determined by the research objectives. In this case, the population is indicated by the management objective: "a survey of the market to describe the size of the market, major segments, PowerRex's current share of the total market and its relevant segments, and their brand image." A proper answer should include a sampling unit (household) with the necessary requirements (income/wealth) and constraints (electrical, water, and sewer services).

The national population figure of 74 million would be inappropriate for the research population, since this nation is not fully industrialized. With a per capita GNP of around $200, a substantial proportion of the populace would not have the ability to purchase major appliances. While students cannot be expected to have detailed knowledge of Vietnamese development, they should readily recognize that electrical power, water and sewer systems would not be universally available. Lacking utilities limits the ability of households to use washing machines: and, therefore, parts of the country, and certain city districts would not be included in the research population. An additional constraint might be the geographic coverage of distribution channels and retailers that would be available to PowerRex.

The decision to sample three cities and the local manager's suggestion to use only two cities may reflect a tendency to not recognize the existence of the lower income populace. In societies characterized by inequality in income distribution, the elite classes (Vietnamese graduate students) often ignore the lower classes. This split view of a population could result in including non-users in the quantitative definition of the population (74 million) but excluding them from the conceptual definition (market, relevant segment, etc.). Such a limited perception may lead to samples for which inference are valid for a population of only those cities.

Students may suggest definitions such as washing machine owners, residents of the sample cities, buyers of any PowerRex products, retailers of appliances, or other subsets of the population. These reflect the error of a sample defining the population rather than the population defining the sample design.

The concept of "relevant segments" may stimulate some students to distinguish between residential and commercial users such as laundries and hotels. The issues discussed above remain relevant.

2. *Describe how to determine a sampling frame for this research.*

Answer: The sample frame must be a list of households with electric power, water, sewer, and appropriate income/wealth. No such list is likely to exist. Since not all households are included, this frame must discriminate among households. Lists that may exist could be of households with utilities; these lists could be acquired from suppliers of power, water, and/or sewer systems. Further screening would have to happen in the survey process to qualify households according to the remaining criteria.

Discussion: Students should recognize that there is not likely to be a readily available sample frame. Alternatives include sampling everyone and using a screening instrument to reach the target population. More reasonable would be to consider the possibility of identifying a potential list source that would better approximate the population of interest. The various utilities should come to mind. This provides a good example of a practical application of the concept of incidence in sampling.

In the case of a communist nation, utility companies are extensions of the government. To the degree that agencies are capable of cooperation, the success of this project is in the interest of the government. Reasonable assumptions might be made regarding cooperation of utility management through appropriate approval processes.

An answer of "a list of households with enough income" presupposes the availability of such a list. Assumptions of lists of target income level subjects should have some explanation of what the source would be and how they would identify that source and acquire the list.

Creative ideas should be encouraged and reviewed. One that has been suggested is to get customer lists from appliance distributors. While relating to the target market, the client is a small share producer, distributors owe them little loyalty. Their willing ness to supply customer lists may be minimal, and there is no assurance of distributors having such lists. Even if such lists could be secured, they only list current ownership. Potential new washing machine owners would not be included.

Government agencies may be able to provide lists of laundries and hospitality enterprises to provide frames for the commercial side of washing machine demand.

3. *Evaluate potential sources of sampling error.*

Answer: There are two types of sampling error: those that occur through the method of sample selection and those that depend on sample size.

Among the selection errors would be sample frame error where the supplier (utility company) of whatever list used may be incomplete or inaccurate in maintaining its list. Another error would be the impact of non-probability sampling verses probability methods. The convenience sample of choosing only the biggest cities ignores the possibility that smaller cities or rural areas may have different responses, even if probability methods are used within the cities. This method fails the face validity requirement to be representative of the whole potential market.

As to sample size, regardless of whether the project surveys 30 or 50 in two or three cities, the total number is too small to achieve what most researchers would consider a reasonable level of accuracy and/or confidence. For a decision of this magnitude, asking the parent company for a more substantial budget would be quite reasonable.

Discussion: Students may comment on the reliability of communist or third world government agencies or government enterprises as suppliers of any information, including customer lists.

For a non-probability sampling method to be justified, an argument for representativeness would have to be made. Students would have to demonstrate how the sample gained would better represent the population for the cost or time available compared with probability methods. Such an argument might be that a judgment or quota sampling approach could assure that important segments are included that may not be represented in a small probability sample being proposed. In such a case non-probability sampling may be more cost effective.

The concern for incentives for respondents indicates the issue of nonresponse error. Is $2.00 enough? Does the incentive change the response?

Students may recognize that these are small sample sizes for national demand analysis. Even combining the largest proposed size for all three cities, the total is only 150. Depending on the level of analysis desired, students may be assigned to evaluate the accuracy of the suggested options.

Using the formulas for sample size and assuming a traditional confidence level of 95 percent, we can examine the effect on accuracy of the various sample sizes suggested in the case.

Proportion variable measures: $n = \frac{Z^2(pq)}{e^2}$.

Interval variable measures: $n = \frac{Z^2 s^2}{e^2}$.

Where:

n = sample size
Z = the standard error associated with the level of confidence
e = acceptable error
p = estimated variability in the population
q = (100%- p)
s = variability indicated by an estimated standard deviation

When we convert the equations to measure the resulting error we get:

$$e = \sqrt{\frac{Z^2(pq)}{n}} \quad \text{and} \quad e = \sqrt{\frac{Z^2 s^2}{n}}.$$

A 95 percent confidence error would be a Z value of 1.96. (For estimation purposes, 2 would easily suffice)

A conservative maximum variance of pq would be (.5)(.5) for proportional variables such as market share or awareness. For interval scale variables range estimates could be made. With Likert type scales, for example, the total range is 4 units. Two standard deviations would yield a standard deviation of one. By applying these estimates to the sample sizes indicated in the case the error levels would be:

For sample size 150, all three cities at 50 respondents each, we get:

$$.056 = \sqrt{\frac{1.96^2(.5)(.5)}{150}} \quad \text{and} \quad .160 = \sqrt{\frac{1.96^2(1)^2}{150}}.$$

For sample size 100, two cities at 50 respondents each, we get:

$$.098 = \sqrt{\frac{1.96^2(.5)(.5)}{100}} \quad \text{and} \quad .196 = \sqrt{\frac{1.96^2(1)^2}{100}}.$$

Sample size 60, two cities at 30 respondent each

$$.126 = \sqrt{\frac{1.96^2(.5)(.5)}{50}} \quad \text{and} \quad .253 = \sqrt{\frac{1.96^2(1)^2}{50}}.$$

Market share is a proportion variable. Since PowerRex is a new and expensive washing machine brand, its market share will be small. The largest sample size of 150 yields an error of 5.6 percent, which may well approximate or exceed the market share. Smaller sample sizes yield even more error.

For the Likert scale, the error ranges of .16 and higher may obscure the ability to distinguish between images of competing brands.

Comparable analysis could be done holding the error level constant and solving for the various levels of confidence at each sample size.

A more extended assignment for this case would be to add an additional fourth activity to prepare a sampling plan. This would repeat the first two answers and require students to propose a sampling method and sample size to cope with the errors identified in #3.

CONCLUSION

Use of this case has provided students with an interesting exposure to real research experience in formulating a sample plan. This tends to be a subject where text material and classroom coverage of concepts are noted without serious consideration of the issues involved. The international aspects of the case require students to reflect on the nature of population definition, sample frame determination, and sampling error. An additional benefit has been that the case has proved to engage student interest far more than the lectures had in the past while maintaining or, perhaps, improving test scores over the same material. An additional potential contribution of this case, beyond bringing an Asian situation to the western student, is that it provides an Asian case to marketing at a time when so few are available.

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CHAPTER THREE

INTEGRATING INTERNET TECHNOLOGY TO ENHANCE TEACHING AND LEARNING

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Abstract

Internet technology has become a vital tool of the teaching profession. To prepare today's students for tomorrow's needs, it is extremely important that students learn to deal with new technology. Exposure to this new technology will also provide students with an opportunity to adapt to changing circumstances. Numerous tools have been implemented at Purdue University School of Technology at Columbus to enhance traditional as well as distance learning. Use of these technologies in the face-to-face teaching and learning environment has raised student interest in the subject matter and in technology in general. It has also increased student interaction, information retention, and has also helped with student retention. This paper addresses the use of email and discussion forums for the class and sub-groups of class members. It will also discuss chat rooms for a class, submission of homework assignments over the Internet, and Internet publication of class schedules, assignments, syllabi, and class announcements. By implementing Internet technology as a teaching enhancement tool, both teaching and learning can be made very effective, easy, and even entertaining.

INTERNET TODAY

We can safely say that this is the era of information technology. We are witnessing the integration of technology in education more and more every day. Many people have invested considerable time and effort in course development and Internet applications. However, many teachers still feel threatened by the latest technology and believe that it should be implemented only within the field of technology itself.

The expansion of web technology has opened doors to a variety of businesses as well as to education, research, and communications. Businesses are using the World Wide Web (WWW) as a tool for sales and marketing. Universities are using it as a research, teaching, and learning tool. Many instructors are using the Web to publish their syllabi, distribute handouts and homework assignments, deliver lectures, publish grades, and communicate with students. In similar way, students are using it to submit their homework from home, to communicate with instructors and fellow students in group discussions, and to work together on projects.

ONCOURSE

We see Internet teaching technology being used in almost every academic field. I have been using a program known as Oncourse. It is a web course delivery system developed by Indiana University-Purdue University Indianapolis (IUPUI). This program is extremely easy to use and is a very effective tool for instructors and students. In my case, the main reason for using this technology is to enhance the traditional face-to-face teaching and learning environment. Oncourse is very user-friendly, and any faculty member can learn how to use this technology in a short amount of time and become productive. Students quickly become comfortable with using this technology as well. The user does not have to be a computer specialist to use Oncourse. It also appears to be very reliable, secure, and easy to use for both the instructors and the students. Authoring is simple; you can cut and paste from any Windows programming directly to the Oncourse web page and thus publish immediately. You can also add, modify, and remove students interactively.

"Oncourse is a software system that provides a comprehensive solution for the creation, management, maintenance, and viewing of sophisticated World Wide Web-based teaching and learning environments. For distance education courses or face-to-face instruction, Oncourse offers an easy-to-use way for faculty to develop distributed multimedia course content and use collaborative tools to support teaching and learning. The Oncourse toolbox is conceived and designed by educators for educators at the WebLab group on the IUPUI campus, part of the Indiana University Advanced Information Technology Laboratory."[1]

Integrating web technology with traditional teaching methods to enhance both teaching and learning has great value. If a student misses a class he/she can access what he/she missed in the class and thus prepare for the next class. This availability and ease of use may be more appreciated in the environment where most of the students are non-traditional, and who may require more flexible schedules. Many of these students work full-time, have children, or have business assignments which require considerable travel.

I believe that face-to-face learning is the best way to learn and cannot be totally replaced by any other means or mode of technology. However, implementing Internet technology to enhance the quality of teaching and learning can be of enormous benefit to the student. As can be seen from the following Oncourse usage and other data, currently more than 6,000 courses are being offered using this technology and there are more than 96,000 user accounts. (Table 1)

TABLE 1 - ONCOURSE USAGE AND OTHER DATA[2]

Usage Data		Other Data	
System Logins*	70,861	Syllabi	281
Course Logins*	90,461	Schedules	212
User Accounts	96,012	Mail Msgs	12,639
Total Courses	6,067	Forum Msgs	3,356
External Courses	12	*Activity since Jan 11, 1999	
Maintained Courses	397	Last updated Mar 16, 1999	

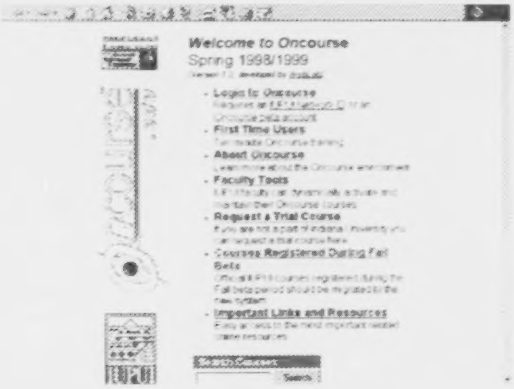
WHAT CAN I DO WITH ONCOURSE?

This tool can be used in distance education and distributed learning, classroom teaching, workshops and training, and collaborative learning environments. Through using Oncourse technology you can post your syllabi and announcements, create discussion forums and class chat rooms, e-mail with attachments with the class, provide resources, grade on-line and send instant feedback and grades, and on-line help on using Oncourse.

Teaching methods need to be altered in order to accommodate the technology that has flourished via the Internet. The various technological contributions from this constantly changing field will continue to have a great impact on the outcome and delivery of education by integrating the Internet with the curriculum. Oncourse has helped a number of instructors incorporate Internet technology into their teaching/learning environment successfully. In order to use this technology one need not any special client software. All you need is the last Internet Explorer or Netscape browser.

The software is tied to the main student database. Oncourse will automatically select all the registered students in the class so that you do not have to enter each student one at a time. It will save you a significant amount of time if you are teaching many classes and have many students enrolled in those classes. At the same time, you can still manually add, modify, and remove students from your class. If necessary, you can even delegate authoring capability to other students. (Figure 1 and 2)

FIGURE 1

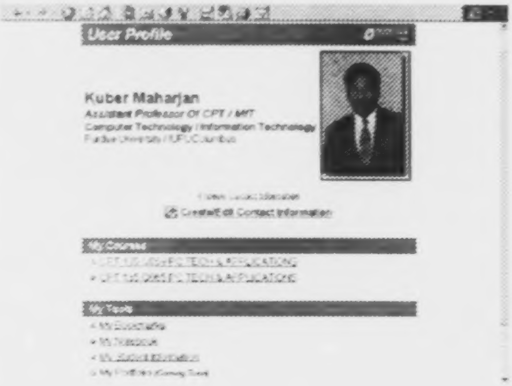


Welcome to Oncourse

Spring 1998/1999

- **Login to Oncourse**
- **First Time Users**
- **About Oncourse**
- **Faculty Tools**
- **Request a Trial Course**
- **Courses Registered During Fall Beta**
- **Important Links and Resources**

FIGURE 2



User Profile

Kuber Maharjan

Assistant Professor Of CPT / MIT

Computer Technology / Information Technology

Syllabus

The major benefit of posting the syllabus on the Internet is in its continuous availability to students. A second benefit is in the reduction of usage of printing and distribution resources. It is also easy to amend and correct syllabi since you need to edit only one copy of the syllabus. Once you publish the updated syllabus, it is immediately available to all.

E-Mail

One very useful feature of the Oncourse e-mail system automatically groups all the e-mail by class. All messages are available all the time because they are stored on the server. Therefore they are very simple to manage. Oncourse also supports attachments and can grade attachments on-line.

Using e-mail exposes students to the use of new technologies. Because it is very user friendly and reliable, the students enjoy using this technology. It is up to the instructor to monitor the progress and use of this technology properly. Students expect a quick response from the instructor and they want to see the ongoing activities over the net.

Besides using e-mail for regular course communication, I use it to get feedback from the students. Many students do not like to ask questions in front of the whole class, but if they are using the computer to ask questions they feel much more comfortable. After the class, I always ask my students the following four questions, which they have to respond to by using Oncourse to send me their replies via the Internet:

1. What did you learn today?
2. What did you like?
3. What did you not like? Why?
4. Do you have any questions/comments/concerns/suggestions?

After I have received the feedback from all the students, I then copy the questions, respond to them and distribute the questions and responses to all the students. This way everyone knows which questions were asked and what were the answers.

Chat

You should set up a regular chat session, for example every Tuesday and Wednesday from 6 p.m. to 7 p.m. No matter where the students are, if they have any question they can participate in real time. This is very helpful for students who are attending classes that meet only once a week. Unlike other chat programs, only the members of the class can participate in the chat session. Students may not have been able to attend the class but they are able to communicate in real time with the instructor or their peers.

Class Forum

You can create a single class discussion forum or many sub-forums, where students and the instructor both participate. This allows each group in the class to have their own forum to discuss their projects. (Figure 3)

FIGURE 3

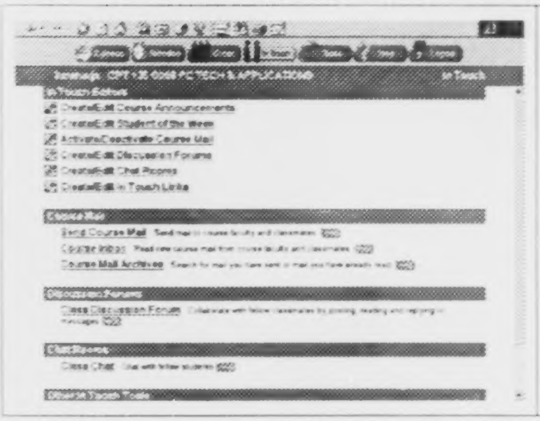
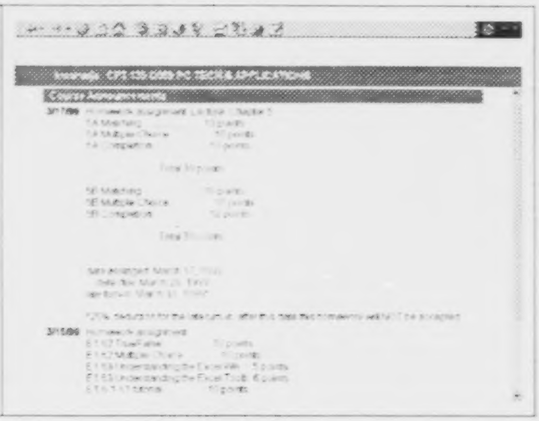

CPT 135 0068 PC TECH & APPLICATIONS
In Touch
Create/Edit Course Announcements
Create/Edit Student of the Week
Activate/Deactivate Course Mail
Create/Edit Discussion Forums
Create/Edit Chat Rooms
Create/Edit In Touch Links
Course Mail
Send Course Mail
Course Inbox
Course Mail Archives
Discussion Forums
Class Discussion Forum
Chat Rooms
Class Chat

FIGURE 4


CPT 135 0068 PC TECH & APPLICATIONS

Announcements

Oncourse is an excellent tool for publishing a variety of class announcements. For example, you can publish upcoming campus events, class announcements, and other information. I publish all the homework assignments. If a student is absent he/she knows what assignments are assigned and which were covered in the class. (Figure 4)

OTHER INTERNET TECHNOLOGIES

You can complement Oncourse with other Internet technologies if necessary. Some other useful Internet technologies are the World Wide Web and File Transfer Protocol (FTP).

WWW

Lecture slides can be made available to students via the World Wide Web. Students will have access to the lecture materials all the time from home, work, or school. Posting student grades on the WWW lets students easily view their grades. It is important that grades should be secured and protected so that only authorized students have access only to their own grades. With this system, students always know how are they doing in the class. I also distribute a simple spreadsheet program to help students track their own grades.

FTP

File Transfer Protocol is a great tool for transferring documents to/from students' home directories. If possible, give the students remote FTP access from their home computers to their on-campus home directories. Many students have access to the Internet from their homes. They can transfer their homework assignments and projects to the instructor without having to carry a disk with them. FTP gives students access to their documents 24 hours a day, 7 days a week, from all over the world. At the same time it encourages and teaches students how to use technology to their advantage.

BEST COPY AVAILABLE

A variety of programs are available for integrating Internet technology into your curriculum, and they are excellent tools for enhancing interactive teaching and learning. Instructors should experiment with a number of tools and select the ones that best meet their needs. The proper use of technology will definitely benefit both students and instructors. We should always remember, though, that after the system is properly installed and maintained, it is still up to the teacher and student to make the learning interaction successful.

ENDNOTES

1. http://weblab.iupui.edu/projects/Oncourse.html#What
2. http://oncourse.iupui.edu/Current

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http://oncourse.iupui.edu
http://www.aln.org
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http://www.ews.uiuc.edu/Mallard
http://www.formalysystems.com
http://www.fsu.edu/~crimdo/courses/dl1.html
http://www.macromedia.com
http://www.math.luc.edu/mcc96/papers/defazio.txt
http://www.measureup.com
http://www.mgen.com
http://www.ottis.vmicls.com
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http://www.questionmark.com
http://www.softarc.com/homepage.shtml
http://www.solproinc.com
http://www.webct.com

MARKETING ON THE INTERNET: COMMENTS ON AN ELECTRONIC, CROSS-NATIONAL COURSE

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Abstract

During the spring semester of 1997, the two authors team-taught "Marketing on the Internet" at the University Studies Abroad Consortium (USAC) site in Heredia, Costa Rica. The course made use of both professors' area of expertise - computer information systems and marketing. While the course syllabus from that semester is still available for perusal on the Web (http://minch.idbsu.edu/marknet/), the purpose of this paper is to describe that class and to comment on the advantages and disadvantages of not only teaching a course over the Internet, but one taught relying on the technology resources of a developing country and one in which students from two different nationalities are participating. While marketing on the Internet courses are often taught at many universities, to the authors' knowledge, this paper describes the first time such a course purposefully involved locations in more than one country.

MARKETING ON THE INTERNET

COURSE DESCRIPTION

Marketing on the Internet covered issues in several realms, including the technical, commercial, and cultural aspects of doing business on the Internet. The professors considered each of the traditional marketing mix topics (product, place, price, and promotion) in light of this innovative and rapidly growing global communications infrastructure. Example topics included the following: product--traditional physical products and services as well as emerging information-based products and services; place (distribution)--storefronts to the electronic world, virtual malls, expanding global opportunities for buyer/seller relationships; price--pricing strategies, digital cash, and other new monetary exchange mechanisms; promotion--creating, disseminating, and measuring the effectiveness of advertising on the Internet and World Wide Web. The class was classified as an undergraduate upper division elective in Computer Information Systems, International Business, or Marketing.

While students should have had a basic computer literacy before taking the class, there was in-class coverage of specific Internet-related tools such as World Wide Web browsers. Many of the course materials were available online. There were American students studying at the Costa Rica site, students from the professors' home university, and even one student participating from a remote site in another U.S. state in the class. In addition, USAC had an agreement with the host university in Heredia (Universidad Nacional) to allow its computer science students into the class. All on-line discussions were in English, although often the classroom meetings in Costa Rica with the local students were conducted in a mixture of English and Spanish. An especially interesting class activity was the Internet videoconferencing experiment described below, as well as a tour of RACSA (Radiográfica Costarricense, S.A. - the Costa Rican government telecommunications and energy monopoly) for the students studying at UNA (Universidad Nacional).

Students were graded on the basis of two exams, participation using Nicenet's Internet Classroom Assistant (a site were professors can set up class discussion and information conferencing capabilities), homework (Net-Activities in Hall and Allen [1996]) and an Internet Marketing Project.

COURSE MATERIALS

The textbooks required for the class included Hall and Allen [1996] and Ellsworth and Ellsworth [1996]. *A Preface to Marketing Management* by Peter and Donnelly [1997] was also required for those with limited marketing background. This marketing primer was especially helpful for the "Tico" (native Costarican) students who had never had a marketing class before. Readers should keep in mind that this course was taught in 1997; more materials would be available for those courses taught today, such as Ekin's [1999] *Perspectives: Marketing on the Internet.*

Other required materials included copies of Internet marketing-related articles [e.g. Hoffman and Novak, 1996], available at libraries or elsewhere at BSU and UNA. Some of these articles were scanned in and posted on the course Web site. Students were either shown (during the Costa Rica classes) segments from the PBS (Public Broadcasting Service) series "Life on the Internet," or they could access the videos from the home university library. Transcripts and additional information about these video segments, and even some of the video material itself, were accessible on the Internet (http://www.pbs.org). Video segments shown included "Understanding the Internet," Net Profits," Digital Dollars" and "Next Stop the Future."

AN INTERNET VIDEOCONFERENCING EXPERIMENT

Introduction

This informal Internet videoconferencing experiment was conducted as part of the Marketing on the Internet class offered through Boise State University in the US, the Universidad Nacional in Costa Rica, and the University Studies Abroad Consortium during the Spring semester 1997. It linked the class participants at BSU in Idaho and the Universidad Nacional in Heredia during the final exam on May 9, 1997. Ten students used computers in an Electronic Meeting Room on the BSU campus to take the exam, while the course professors were connected on line in Costa Rica.

Goals

The goals of the trial were to test the effectiveness of Internet desktop videoconferencing to answer student questions during the exam and to discuss the class after the exam, as well as generally to gain a feeling for the usability of this technology for classroom communication. These major facilities were used in point-to-point mode between Heredia, Costa Rica and Boise, Idaho:

- Two-way motion video, so that each side could see the other (some participants in the class had never seen each other before).
- Two-way audio, so that telephone-like conversations could be held (also saving some $1-$2 per minute in long-distance phone charges).
- Chat, allowing simultaneous typing and viewing of text on both side (especially useful when audio was garbled).
- Shared whiteboard, for simultaneous editing of graphics etc. in a common workspace (useful for drawing diagrams and inserting images for both sides to view).
- File transfer, to send completed exams from the students in Boise to the Professors in Costa Rica.

Application sharing, which allows multiple participants to work in a single application such as a word processor, was not used in this trial. While provided with the software used, a previous test found it to be quite cumbersome and slow. Further information about the role conferencing tools might play in online courses may be found in John Bigelow's [1998] working paper, "Elements of an Online Course."

Technology Used

The software used in both locations was Microsoft NetMeeting 2.0, which was released in early May 1997 and was available at no cost. In Boise, an HP Pentium computer was used, with a QuickCam black and white camera attached to the parallel port and the machine connected to a large-screen projector. In Costa Rica, a Micron Millenia Transport Pentium computer was used, with a QuickCam color camera attached to the parallel port. The Boise machine was connected to the Internet via LAN and T1-speed connection, while in Costa Rica the computer used a 28.8Kbps modem for dial-up connection to RACSA, the Costa Rican dial-up Internet service provider. The dial-up connection performance in Costa Rica was monitored using NetMedic software. During the experiment, the particular modem connection was made at 26.4Kbps nominal speed with potential 4-1 compression. Actual full-duplex communication speed (sum of transmitted and received bits) tended to range from 10 to 35Kbps. The connection lasted 3.5 hours before being deliberately terminated.

Results

Video came across quite well for simple images such as a relatively still face against an unmoving plain background, but very blurred for wide room shots with many people moving at once. The video was useful for recognizing individual identities and in some cases facial expressions at the other location, but would not be usable for displaying documents or other finely detailed images. Example screen images can be found via the course web site at http://minch.idbsu.edu/marknet/VC.htm.

Audio performed satisfactorily part of the time, ranging from near telephone quality at best to unintelligible at worst. Delays in transmission seemed to average around one second. It was found that the audio was often garbled if video was being used at the same time, but that if video was paused the audio was quite usable.

Chat served well as the "lowest common denominator" communication service. If audio was not intelligible, for example, the text chat facility could be used either as a replacement or as a means for discussing what might be done to improve the performance of the other media.

A surprising benefit of the shared whiteboard was to send a good-quality video image from one side to the other to better recognize people, etc. This was done by capturing the image on the transmitting side (where image quality was uniformly better) and pasting it into the whiteboard. While the whiteboard was being updated, other functions slowed considerably.

The built-in file transfer feature was a very effective method for transferring the completed exams. Being integrated into the conferencing facility as a whole allowed other communication to take place as the files were being sent, as well as to immediately verify that the proper files were received intact. Examples of some of the better-quality sample images saved as stills and can be viewed on the course Web site.

PERCEPTION OF VALUE OF COURSE CONTENT

The course was well received by the Costa Rican hosts. The College of Natural and Exact Sciences of UNA asked the professors to give the opening address of the semester to its students. "Telecomunicaciones e Internet: Tendencias e Implicaciones" was well attended and generated much conversation and many questions from the attendees, even if the talk was admittedly presented in "muy mal español." The course even received notice in the media. *La Nación*, the country's major newspaper reported on the fact that "estudiantes universitarios en Costa Rica y Estados Unidos están recibiendo el mismo curso simultáneamente" [Bulgarelli, 1997] (university students in Costa Rica and the United States are receiving the same course simultaneously).

CROSS-NATIONAL ELECTRONIC STUDENT PROJECTS

CHALLENGES OF TECHNOLOGY RESOURCES OVERSEAS

Technological challenges could be classified into two general areas: purely technical infrastructure factors and somewhat less technical issues related to the diffusion, adoption, and general acceptance of technology in the culture. In the infrastructure area, the visiting professors in Costa Rica needed to respond to a variety of technical constraints with generous amounts of patience and innovation. For example, to deal with the oversubscribed and congested networks on the UNA campus, a direct connection to the Internet though the university's computer "machine room" was arranged. This essentially bypassed other traffic on the way to the campus router and the dedicated link to RACSA (the government Internet utility) and satellite connections to the outside world. At times it was found that a dial-up connection directly to RACSA performed better than any access from the university, therefore significant dial-up access from the professors' residences was also used. In fact, a move from one neighborhood to another proved necessary half-way through the semester, in order to be in an area served by more modern telephone switching equipment. Cooperation from university administrators and technical support personnel was timely and enthusiastic throughout—an absolutely essential prerequisite for success.

Less technical issues related to technology diffusion, adoption, and general acceptance of technology in the culture were less obvious but nevertheless important. Much of the more advanced technology on the UNA campus was centralized in dedicated facilities such as the library or a special "Internet Lab." This meant that access for faculty, staff, and students was less than universal in scope, and often limited by geographical distance and time of day as well. Many tools such as email had not been well integrated into the daily routines of most UNA faculty and students, and thus served more as occasional substitutes for other resources rather than technologies which would provide a net increase in productivity or radically changed existing teaching or learning activities. Another example of this phenomenon was that email was generally used as a purely communicative tool (e.g., replacing long-distance telephone calls) rather than an information organization and archiving tool (managing large, categorized collections of messages and responses over time). It was interesting that the technology demands and usage patterns of visiting faculty and students from a variety of countries outside Costa Rica, while placing pressure on existing facilities, also tended to promote more rapid modernization and adoption of technology on the campus.

CHALLENGES OF DISTANCE AND CULTURE

While Marketing on the Internet was not meant to be predominantly an International or Cross-cultural course, inevitably these issues arose when students of four different native languages (English, Spanish, French, and Chinese) from two different countries tried to work on class projects together. To provide some cross-cultural humor, the professors provided links to CyberSpanglish terms and other anecdotal international computer information.

However, in addition to some of the technology limitations of overseas electronic courses, the professors found that long-distance corroborative efforts can be difficult. When a group of US-based students and Costa Ricans conducted a marketing research survey over the Internet, the students quickly learned about the problems of conducting research in different countries while trying to keep the survey form as similar as possible. Specifically, in a section of leisure activities, the US portion of the group had included "fishing" and "boating." Tico students asked why these should be included as leisure activities for a survey when the only reason that Costa Ricans fish or boat is for food or because they are being hired by rich foreigners. Providing equivalent categories for a question relating to average annual household income was also difficult.

All in the above-mentioned group were good students. The professors had had several of them in previous classes and the authors felt that if the students would have had the opportunity for face-to-face meetings, all problems would be quickly overcome and even the cross-national differences would not be such an issue. However, the lack of face-to-face contact and the cross-cultural implications did hinder the development and execution of the project.

SUMMARY AND CONCLUSIONS: SUGGESTIONS FOR OTHERS

Suggestions for others, based on the experiences described above, include both technical and cultural issues. In the technical areas advance preparation is essential in order to determine what level of computing hardware, software, and network support will be available at the host institution. Commitment by the host institution's administrators, and availability of technical support personnel are also important. In cases where particular resources are not readily available at a host campus, facilities at other locations should be considered (for example, we used web servers in the US as well as in Costa Rica to hold class materials, and we used two separate dial-up providers for Internet access). It is valuable for instructors to have a clear understanding of what learning processes will be required by the students and how they can be accomplished by various technologies. Bigelow [1998] presented a useful table relating learning processes such as presenting information, communication among students and instructor, tracking of student progress and feedback to students, and learning activities with the technological processes involved (home pages, weekly assignments, introductory materials, conferencing, exams, and help).

While Bigelow [1998] now views "with less tolerance the constraints of the classroom," such as parking, limited media presentation facilities, and "the difficulty of conducting discussion and of keeping current with group activities," these constraints still had to be dealt with in the two-country class. Students at all locations should be appraised of the available technologies and their limitations before the class begins. During a semester, progress reports and occasional messages describing the challenges faced may help them to understand the process and to be more forgiving of problems. Contingency plans should be well understood by all parties to deal with problems such as outages disrupting email. Redundant strategies for accessing the Internet and other critical resources should be in place. When difficulties arise, a fall-back position relying on simpler and more reliable technologies should always be available.

Distance and cross-national difficulties can be lessened by frequent communication, educating the "foreign" students of cultural, political, and geographic issues. The discussion lists can easily be used for this purpose as well as for class-related material. For example, the professors remember posting summaries on Nicenet regarding the following: the significance of the holiday of Día de San José; the necessity of the instructors being "off-line" for a week while they left the country (trip to Panama which achieved the requirement of only being in Costa Rica for three months, after which tourists must leave and reenter the country); and even the nationalistic pride inherent in any discussion of why the government has considerable popular support in their monopoly on telecommunications and energy. One of the U.S. students taking the class from the Costa Rica site had a mother who was born in that country. Therefore, she was able to act as a cultural "go-between" and could post comments and respond to cultural questions on the discussion list. Perhaps the most important element which brought students in both locations together was having each student's digitized photograph available for all class members to see. The videoconferencing experiment described earlier helped to "put a face" to those students in the other location. Having scanned-in photographs available of Costa Rica locations, flowers, and animals helped the U.S. based students have a better appreciation for what everyday life may be like in the other location.

If the class were held today (1999) instead of 1997, some incremental improvements in technology would be evident but a surprising proportion of the technical environment would not be significantly changed. Incremental improvements include campus computer lab and network upgrades at UNA and increased bandwidth availability between Costa Rica and the US. A review of Costa Rica's national and university network infrastructure in March 1999, somewhat limited by the lack of up-to-date information on the institution's Web sites [RACSA Home Page; Universidad Nacional Home Page], found actual or proposed Internet speed increases of several hundred percent for many network components. Nevertheless, demands on this bandwidth have increased in parallel, and informal testing indicates available bandwidth and effective response times seem relatively unchanged. Most of the software tools used, such as NetMeeting, have been upgraded or supplemented by competitive offerings, but the basic functionality has not been dramatically improved. Of course, continued increasing popularity of the Internet means there are many more Web sites dealing with class topics such as electronic commerce, and thus a wider scope of online resources would be available today.

In short, the technological constraints were somewhat difficult to overcome, but not insurmountable. The students appreciated having the opportunity to learn more about the emerging importance of e-commerce, but also enjoyed learning about the other geographical site involved with the course. Perhaps the most rewarding benefit the professors found was that one of the Costa Rican students, who already had good technological skills, gained such an improvement in his English skills and his knowledge of U.S. cultural and business practices that he was selected as UNA's full-ride scholarship recipient to study during the summer at a U.S. university. Based on his acquired experience, he was then hired to help repair a network server used in a Network Management class at the authors' university. Upon his return to Costa Rica, he was hired full-time by UNA to manage the Internet Lab and to serve as the host university's liaison with the studies abroad program there. The professors had hoped that Marketing on the Internet would, in some small way, help students learn about technology, marketing, international business practices, and cross-cultural understanding. International career development of the student participants was unforeseen, but valuable. The authors look forward to hearing about others attempting similar classes in the future.

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FRISCAWAI'I: A TRANS-PACIFIC CLASSROOM WEB COLLABORATION

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Abstract

Everyone loves to boast about an online collaborative artwork, no matter how thin the initial premise or small the innovation. And, as in private industry, rarely does a fine arts software project conclued with an analytical postmortem of a project of any kind. The project "Friscawai'i", involving students of Violet Murakami and Mike Mosher <mikemosh@well.com>, merits study because, well, it sort of sputtered to its incompletion.

WHAT WAS WANTED

Artists Violet Murakami and Mike Mosher had spoken enthusiastically about the possibilities of collaboration on a project for some time, when Violet was in the San Francisco Bay Area in 1995, and in several subsequent online conversations. Both are graduates of the San Francisco State University M.F.A. in Conceptual Design (Later Conceptual/Information Arts)

At the beginning of 1998 Violet had been teaching for several years at Kapi'olani Community College. Mike was teaching Art 412: Art and Emerging Technologies in the in the SFSU Art Department CIA Program. That year he was one of the lecturers teaching the classes of Professor Stephen Wilson—M.F.A. Advisor to both Violet and Mike—when he was on sabbatical completing his third book.

Friendship and respect for each others work motivated Violet and Mike to develop this project, but there were two strong interests besides. The first was cultural studies, and the opportunity to get students to think critically about their environment and to put that critical stance into their work. Violet had assigned a rigorous reading list that included Edgar Heap of Birds critical of New Age appropriation of Native American imagery, Karen Kosasa, bell hooks, Douglas Kellner, Lynne Hershman, Media Virus and the Guerilla Girls. Violet had recently read Haunani Kay Trasks' From a Native Daughter and Loverly Hula Hands, which alerted her to the crass misuse of the imagery and language of traditional island people, so suggested changing Mike's neologism "Friscoaloha" to "Friscawai'i'". She had recently created artwork on the subject of breast cancer, which appeared in the group show "Art.Rage.Us" in San Francisco,1998. Mike is a frequent contributor to the journal of "Politics in Everyday Life" Bad Subjects, where his essay on cyberspace "Towards Community Art Machines" <www.eserver.org/bs/18> was included in its 1998 anthology published by New York University Press.

The second motivating issue was the chance to question and play with the veracity and trustworthiness of online communications, an interest heightened by a hoax played—much to his amusement—upon Mike. Their fellow San Francisco State University M.F.A. Jerry Rosenbloom was visiting Violet in Hawaii in 1995. Suddenly e-mails from Violet about Jerry's impending arrival turned to disturbed messages about his arrest for mouthing of, joking inappropriately about explosives, in the airport. Subsequent e-mails grew more grim, suggesting that Jerry's radical past in the 1970s led to FBI involvement, and that he listed Mike as a personal reference. This was at the height of the search for the Unabomber, so all of this appeared plausible...until it later turned out that the messages were from Jerry all along, merely using Violet's e-mail account. How ready should one be to trust the sender on the other end of the wire, even if you trust the person whose name is in the return address?

CONCEPT

The concept behind "Friscawai'i" was to create a site for a fictitious nation, created by sesimic cataclysm that broke off the San Francisco Bay area and moved it to rest beside the Hawaiian Islands. By using a fictitious nation that was an amalgam of the two, as in the Eighteenth-Century fictional works of Jonathan Swift, it was hoped there would be much room for serious cultural criticism, lighthearted political satire and visual and literary invention.

The opening page said "Welcome to Friscawai'i.". The unexpected cataclysmic tectonic shifts of the first decade of the Twenty-First Century resulted in the physical commingling of two regions previously separated by many miles—the Hawaiian Islands and the San Francisco Bay area. New life forms and new cultural artifacts soon developed. The new nation's history was publicly constructed in this historic electronic quilt, in which its citizens commemorated its many aspects and deposited and and stories." It went on to give directions, "To learn about the Flora and Fauna of the new islands, use the icons directly below", and two rows of icons were to follow directly above a map of the mythical region. "To learn about the History and Culture of the new islands, use the icons directly above," and two more rows of icons were positioned beneath the map.

The text continued: "The new political unit that ensued was alternately called the New Bay Islands, Hawai'iyerbabuena, depending on the speaker's agenda, but one name that stuck was Friscawai'i. Tales of exploration and self-exploration of this growing grafted culture was based on early contact, observation and misinformation or self-serving legend. From initial accounts it seemed to graft a modern culture and economy to battles over water rights and traditions of ocean navigation, support independence movements and ethnic pride in a polyglot salad-bowl of peoples, to a shared propensity for gay marriages and toleration of diversity. The new proximity of the cultural capitals San Francisco and Hawaii suddenly diminished the importance of the rest of California and the continental United States. We are the World. Like medieval travelers' accounts, the stories and artwork of the peoples of the Friscawai'i were fantastic, powerful, subtle, radical, extreme, exciting, decorative, sexy and beautiful.

Please, enter into the RITUAL OF RECOLLECTION and enter your own contribution."

This link then took the visitor to the FRISCAWAI'I RITUAL OF RECOLLECTION, or method by which textual and visual imagery was contributed to the project. "To stimulate imagery for the Friscawai'i Historic Museum (and collaborative communication between the nation's citizenry), each participant in California and Hawaii will be paired via e-mail with someone from the "other side"--Hawaii or California -- to be their partner. E-mail violet@hawaii.edu to be paired with a partner who'll send you three statements about "the other side" to match the three you send her/him. Each participant will provide the partner with narrative information, consisting of:

1) one statement that's true
2) one statement that's false
3) one statement that's ambiguous or misleading and the partner on the other side will then construct an exhibit image + text from that information.

Your partner won't tell you which statement is which! That's the mystery of it..."

It was hoped that this process would provide a framework for the students to stretch a bit and think about their daily assumptions about their place and time.

"Nature might include occurrences as a result of forces you see around you now. Culture might include issues of:

a. Tourism, Travel and Sense of Place.
b. Tribe/People/Nation/Empire. But don't satirize another's, make a wry statement about your own.
c. Citizen's family or self-portraits, often arrayed with the symbols of meaningful technology.
d. The Uncharted and the Unknown. "

We then gave directions as to the desired visual amd textual output: "When you've digested your partner's statements, create a GIF or JPEG 280 pixels tall and 240 pixels wide and statement about it. Try to keep your file size small. Attach also a 32 x 32 pixel GIF or JPEG derived from the larger GIF to serve as an icon near the map on the Welcome page. When the historic image for exhibition is completed , attach it [MIME off, Mac default not PC] to an e-mail statement that describes your contribution. Send the description in ASCII e-mail, not as an attached text file, please. "

THE ARTISTS' CLASSES AND THEIR EXPECTATIONS

In the fall semester, Violet's Art 201 class had created self-portraits in Adobe PhotoShop, layering personal imagery. These were then put on pages in which the visitor could enter responses to questions about the visitor's perception of the artist.

A prototype for the "Friscawai'i" project was assembled in Adobe PageMill by Mike then edited into manageable shape by Violet. At one point shortly after it was loaded an eager student webmaster redesigned it, but his design both eradicated the sense of multiple levels, quilt-like structure of the opening or home page, and the map which made sense of the entire project, so Mike's design was reloaded. The imagery in the student's version was also found somewhat distasteful by Violet, redolent of tourist-industry clichés of dancing happy island people.

After several telephone calls (a medium to which the e-mail-adept artists never thought they'd be forced to resort) to plan "Friscawai'i", the project began. Where to position it in each class' syllabus was an issue, as the Hawaiian class began in early January, while San Francisco's began at the end of that month. As a compromise the "Friscawai'i" project was slated for late February, and both instructors optimistically thought it could be completed by their students in two weeks.

Mid-February Mike asked who would like to undertake an extra-credit piece to put them in the running for a grade of an A. As it wasn't to be taught to them in taught in 410 (the companion class they were taking) until later in the semester, Mike relied upon students already versed in PhotoShop, for nearly half the class raised their hands when asked who was familiar with the program. The five students in Violet's class were expected to generate two images each, as they were paired with nine SFSU students, while Mike took the role of the tenth.

DISAPPOINTING RESULTS AND BAD COMMUNICATIONS

All five member's of Violet's class completed compositions from statements sent by San Francisco students. In depicting the "Californian" half of Friscawai'i, all five students used imagery of the Golden Gate Bridge, which the San Franciscan students pretty much universally felt was clichéd when the page was brought up and projected in front of the class. There was some confusion as to the size of the buttons, for when existing small GIF icons were stretched they lost definition (and Mike never redesigned his own prototype icons as he'd intended).

Of the group of nine SFSU student participants, Tara Lindsay sent away her three statements, then received three which she turned into a page about "Fish SPAM". She was the only San Franciscan to complete an image from Hawaiian statements, and when asked shrugged that she thought the procedure asked for was understandable and doable. The rest of the SFSU participants sort of nervously winced, but Daniel Dunping Zheng, a student from Fujian province in China, exclaimed exasperatedly that he sent his Hawaiian partner his group of three statements several times and got no reply.

Mike never received three statements, from which to generate an image, from the Hawaiian student to which he sent his three.

Mike expected that the students' e-mail communications would be frequent enough that they might introduce themselves to each other (What are you studying there? How old are you? What music do you like?), giving a context to the work they were doing together in their artificial role of Friscawai'ian historians appears there was none, with more communication generated from students to the instructors when they failed to hear from their trans-Pacific partners.

WHAT THE ARTISTS WOULD DO DIFFERENTLY

A cause of breakdown may have been the status of the project in each class. For Violet's small class, the project was a requirement. For Mike's large class, it was positioned as an extra credit the students could complete in order to secure a solid A. An extra-credit project beyond the large final project was always a requirement in Art 412 when taught by Stephen Wilson, and Mike wanted to maintain his standards for the year he replaced him on sabbatical. Yet with other lab projects in Director and Sound Edit 16, plus conceptual and reading assignments on their plate—for both Art 410 and their simultaneous course Art 412—few students were really thinking about (and pacing themselves for) extra credit at that point. Mike's Art 412 students who volunteered for "Friscawai'i" may have found themselves too occupied learning Macromedia Director skills at that part of semester, plus the assignments of a rigorous 410 course too, to focus on this small strange project. Had the project been offered them in late-April, those who already saw their Final Projects nearing completion might have jumped in and completed "Friscawai'i" contributions authoritatively. For a long-distance collaborative student project to succeed they would now recommended it fit into both class syllabi such that it was given equal weight to all participants.

"Friscawai'I," which Mike Mosher and Violet Murakami entered into with enthusiasm and expectations, was frustrated by their students' differing senses of time and priority and perhaps by the instructors' own differing curricular emphases. Both artists Violet and Mike have expressed impatience with other artists' artistic collaborations that fail to achieve both visually attractive and conceptually innovative results, that leave only their snail-like trails of process and little else of significance, so they were both disappointed that this endeavor was not a richly satisfying one to themselves nor to most of their students.

(The author thanks Violet Murakami for suggestions in preparation of this paper.)

DISTANCE EDUCATION:
COMPARISON OF TRADITIONAL AND MULTIMEDIA TEACHING

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Abstract

As society moves into the 21st century, distance education will become more commonplace in higher education. Technology is a major contributor to the dramatic transformation of distance learning. Although the use of technology for distance learning is not new - radio and television have been used effectively for more than forty years - satellites and the internet are transforming the world into a borderless educational arena.

In higher education, instructors are being asked to upgrade their skill base to include training in distance education delivery technologies. However, there are a growing number of institutions that want to participate in distance education, but cannot afford the multi-media technology and training. Similarly, there are instructors that will not embrace the new technologies and will continue willingly to instruct in the traditional mode, "chalk and talk." Additionally, there is a growing resistance among some faculty to distance education for a variety of reasons. Although these reasons may be compelling, this paper will only focus on those instructors that are currently teaching a course in a distance education program and the methodology that they employ to teach distance education courses.

One form of distance education is delivering a course via compressed video through telephone lines. There are many obvious benefits to the institution, the learner and the instructor in this mode of learning, but there are also disadvantages which are not so well documented in the literature. The obvious advantage with this or any distance education program is that expansion of your student market. More students that ordinarily would not be able to complete a traditional degree, now have the opportunity. Foremost amongst these disadvantages is the isolation felt by the distance learners, cut off physically in most cases from both their tutors and other students. In 1990, a small scale study found that this is a major concern for many students, leading to negative feelings about the course work and even, in some cases, to withdrawal form the course (Gallimore, 1990).

Another from of distance education, video taped instruction, is often viewed as an especially inexpensive means for supplementing students' educational experiences and reaching large numbers of students simultaneously (DeLoughry, 1994). Although these features make videotaped instruction advantageous, this form of instruction also has its disadvantages. One of the biggest concerns is that videotaped instruction is devoid of human contact. Without the face-to-face interaction, instructors cannot readily adjust their teaching styles in response to student feedback and, as a result, may find it difficult to create rapport and to motivate students (Beaudoin, 1990). DeLoughry (1994)

expressed these concerns by pointing out that students are "concerned that technology [could] replace interaction" (p. A38).

A third form of distance education, is the technology of online learning, which is transforming the way that information is being delivered to learners. Education, at all levels, is adjusting accordingly to the increased time demands of learners. The exciting aspect of using the internet technology for distance education, for example, is that learners become active participants in the process of understanding course content by implementing interactive, online materials. Although technology plays a key role in the delivery of distance education, instructors must remain focused on the instructional outcomes, not the technology of delivery.

The key to effective distance education is focusing on the needs of the learners, the requirements of the content and the constraints faced by the provider before selecting a delivery system. Typically, this systematic approach will result in a mix of media, each serving a specific purpose. Using an integrated approach, the instructor's task is to carefully select among the technological options. The goal is to build a mix of instructional media, meeting the needs of the learner in a manner that is instructionally effective and economically prudent.

Technology is the tool in distance education, whereas many instructors and institutions are utilizing technology as a gimmick, a marketing ploy to attract students, rather than an effective mode of delivery. Ten years from now, learners will be seeking courses that are delivered in a flexible, effective mode, meaning that the learner can access the "lecture" from their home or their workplace. Likewise, instructors will be able to deliver their "lectures" on or off campus. Distance education has a bright future, however we must remember that we are in the education business, not the technology business.

INTRODUCTION

The higher education development has proceeded into the next phase, *distance education,* where each university is faced with a decision to expand into this phase or be left behind wondering what had happened. If an university decides not to participate in the distance education phase, they may not be able to enter at a later date, as the "technology gap" will be too expansive. When radio was introduced, almost immediately this new technology was used to supplement traditional correspondence courses. The first educational radio license was issued in the United States in 1921, and the first educational television license was issued in 1945. Therefore, it is a misrepresentation to state that distance education is a new phenomena, it is not. Distance education is defined as an educational course where the teacher and the student are separated from each other by a physical distance (DeLoughry, 1994), and technology may be used in the coordination of communication (Smith, 1998). The distance between the student and the teacher can be as small as one room or as far as half way around the world. As we move into the next century, higher education is demanding that instructors upgrade their skill base to include distance education and multimedia presentations. The traditional methodologies that instructors have used are currently under attack by the "new multimedia" students. My definition of the "multimedia student" is a student that has been exposed to the latest technologies, who demands that the instructors use the latest technologies in teaching their courses, who demands that the universities have the latest technologies available to students, who is comfortable with the challenges of the latest technologies and who is not afraid of using the technologies. Why is this new student more challenging than the traditional student? There are many reasons, many of which will be discussed in this paper, along with professor's perceptions of the new multimedia distance education.

DISTANCE LEARNING AND TECHNOLOGY

The issues swirling around distance learning and technology are dramatically altering higher education. The face of change is everywhere and growing. The Chancellor for the University of Maine has been attacked with a firestorm of criticism by attempting to establish a separate accredited network for distance education that would have centralized control of program offerings across a seven campus system (Blumenstyk, 1996b; DeLoughry, 1995a). Maine's Educational Network was the first to create a separate entity to house programs to provide not only degree-based programs via distance education but also a wide range of student services, including academic counseling. The program has furnished 85 courses and 14 separate degree programs using fiber optic and microwave delivery to Maine's 930,000 adults (Blumenstyk, 1996b). Faculty have been particularly concerned about the competition of this structure to their individual campuses and the lack of full time faculty involvement in the program.

Additionally, Washington State University has created a learning and technologies initiative that includes a request for $17.1 million for technology-based education programs, which would include 70 live microwave-delivered courses throughout the state (Mongahan, 1996). The major criticism of this initiative concerns the increased dependency on asynchronous classes, those conducted solely on the internet, the World Wide Web, and via email, that enable learning without any direct contact with faculty.

One dramatic initiative comes from the Western Governors Association, as of July 1, 1996, a governing body was created to establish a virtual university in which students can complete degree programs without ever entering the university campus (Blumenstyk, 1996b). This initiative creates franchises by states located in schools, libraries, and even private businesses, where the distance education course would be offered. The governor of California responded with a proposal to establish their own programs, delivering the courses via the internet, and other technologies (Blumenstyk, 1996d). At the University of Nebraska, a complete Ph.D. program in educational administration is being offered via computer mediated program. The program, with the exception of summer residency requirements, is provided entirely over the internet, irrespective of place or time. Students from Guam, Australia, and throughout the United States are pursuing the degree simultaneously (Seagran, and Watwood, 1996). Iowa has an advanced fiber optic network, called the Iowa Communications Network, that links the entire state. A master degree in school mathematics, as well as a certificate in public management may be earned remotely.

DISTANCE EDUCATION STUDENTS AND TRENDS IN UNIVERSITIES

Distance education students are different from traditional students in many ways. As stated earlier, there was considerable growth over the ensuing decades in distance education around the world. In the United States, by the mid-1980s more than 300,000 students were enrolled in university taught distance education courses (Miller, 1989); in Canada, some 19 conventional universities were active in distance teaching (Curran, 1997). In Australia, the University of Queensland initiative had grown to an enrollment of some 3,000 students by the late 1960s, and by the mid-1980s some 40 institutions enrolled external students with an enrollment equivalent to some 12 percent of the total higher education students (CTEC, 1986). In Russia, where distance teaching was adopted in the late 1920s to increase the output of the educational system (Perreton, 1982), all 61 universities eventually offered education by correspondence (Kuznetsov, 1973) and it is reported in the former German Democratic Republic approximately one quarter of the university and technical college graduates "...attained their qualifications by means of distance education" (Mohle, 1983). It is eminently clear, therefore, that prior to the advent of the open universities, distance teaching had developed into a substantive sector of higher education in quite a few countries.

Nonetheless, the establishment of the Open University in the United Kingdom in 1969 marked a significant development of second phase open and distance learning. The approach adopted by the Open University was highly innovative: in its exclusive focus on distance teaching; in the scale of its commitment to widening access to mature adults to university degrees; in its innovative and mixed media approach to teaching; and in its characteristic openness. The university had an immediate impact on widening access to higher education within the UK, enrolling an initial cohort of 19,581 students in 1971, and in 1991 enrolled 81,575 students a gain of fourfold. Within the wider world of distance teaching the development was also highly influential. In the following two decades other open universities were established, four in Europe and more than 20 in countries throughout the world.

A related trend concerns scale operation of distance education. In a number of cases, particular open universities have a student population which is larger than the largest traditional university. Nonetheless, in many countries the substantive student population is composed of enrollment in distance teaching programs provided by many individual universities and colleges. The widening over time of the range of programs provided and the kinds of student populations served has, in both cases, reinforced the trend towards further growth.

The success of the distance teaching is the primary reason for its enhanced status. This success is evident not just in the scale of distance teaching or in the academic and instructional quality of many of the courses provided, but in the acknowledged satisfaction of students with their experience of distance learning and with the benefits accruing to graduates in later life (Bartels and Rathmore, 1989). It is evident in the acceptance by traditional universities of innovations introduced, or at least made more significant than others, but even a short list must surely include the growing involvement of students as independent learners; the increasingly common modular structure of courses with arrangements for credit accumulation; and the marked trend towards enrolling part-time, mature and non-traditional students in on campus programs. Interesting, there is a greater willingness of traditional universities to accept the graduates of distance teaching programs a postgraduates and research students and for the exceptional few professional chairs.

DISTANCE LEARNING METHODOLOGIES AND EQUIPMENT

The interest in distance education increased significantly with the introduction of interactive television technology and the internet in the classroom. The growth in demand has been fueled primarily by the increase in adult learners and instructional delivery technologies (Wilkinson and Sherman, 1991). The demand from working adults has encouraged many state governments to create statewide delivery systems and/or communications networks to offer higher education at or near the workplace (Lifelong Learning Trends, 1994).

Developing distance education courses can be extremely expensive. A properly equipped interactive distance education classroom, using digital compression technology, can cost more than $95,000 in equipment alone (Ostendorf, 1999). This would include the digital compression equipment, two remote controlled television cameras, four large screen monitors, one document camera, one video cassette recorder, and a facsimile machine. The digital compression technology, now over ten year old technology, needs high speed telephone lines to transmit and receive video and audio data.

In addition to the cost to equip the classroom, supplemental costs include telephone line charges, distance education support personnel, and the instructor's training. The cost of a distance education classroom is double the cost of a traditional classroom in general. Cost is relative to the type and amount of equipment the university choose to make available to the instructors and the students. In fact, the major complaint of many university budget administrators is that when they think that the distance education classroom project is finished, the instructor, the distance education director and/or the industry change the technology. The main problem with keeping up with technology is that it is virtually impossible without a limitless amount of funding. "As soon as you think that you have a jump on the distance education program, technology changes and makes your equipment and/or delivery obsolete" (Osterndorf, 1999).

The video technique of communication may vary from program to program. In some cases, the camera is a fixed position and the instructor is forced to talk directly into the camera, not physically moving out of its range. This obviously will alter the methodology that the instructor can use. The environment can be significantly improved through the use of a touch-sensitive control panel, which can be used to operate the video camera and the other equipment, either by the instructor and/or a director. When the instructor is operating the camera and giving the lecture, there is greater distraction and discontinuity. For example, a student has a question, which may be important to the lecture. The instructor has to stop and operate the camera controls and focus on the student. When a director is operating the camera, the instructors movements can be followed and other documents can be introduced into the lecture in a more continuous manner. In the previous example, the director listens for student questions and turns the camera to the student as the instructor recognizes the student, thus keeping the continuous flow of the course. The document camera, which replaces the overhead projector with transparencies, can be very effective as a teaching tool. This camera displays screen images of documents that are placed on a flat panel on the base of the unit. When the camera is focused, the image of the document is projected on the monitor. Some equipment can place a picture in a picture, so the instructor can be seen, as well as the document image.

The major of distance education courses use a combination of video, audio, fax and online discussions. To support contact between students and instructors outside of the classroom, email, toll-free telephone numbers, and electronic bulletin boards systems are being used. In addition, a telephone and fax system can be used to facilitate an exchange of information between the classrooms. The more sophisticated the equipment will enable the instructor to use a variety of multimedia resources for the classroom instruction. This will also put more emphasis on the proper training for instructors in the use of multimedia presentations.

Students at the remote sites need to adjust to a television image of the instructor and must learn how to interact with the instructor through the interactive audio and video setting that is used. The interaction between student and instructor and/or student and student is essential in the learning process, however this can be hampered by the lack of technology or the improper training of the participants in the distance education process. In the compressed video communication there is a four to six second delay in transmission between sites, therefore it is essential that the instructor pay particular attention to the remote sites for questions. An excellent technique for new to distance learning instructors is to pause every ten minutes to ask for questions from the remote sites. Another excellent communication technique is to inform a remote site that the instructor will be expecting an appropriate question from them in the next fifteen minutes.

When fax machines are used as the communication device between sites, it is important to give adequate time for writing and transmission of the faxes. Email, though state-of-the-art technology, can and does have a delay, which is dependent on the site server. Many remote sites may have "firewalls," these are security mechanisms that protect the site/company/university against outsiders, who may harm the email server. An excellent fax communication technique is to forewarn the remote sites that they should be formulating a question and/or comment on the lecture.

Another growing form of distance education is the use of the internet. Entire courses are being taught through the World Wide Web (WWW) (Gibb, 1996). Internet courses allow the students to view the lecture and the class materials, as well as browse the WWW for related materials. Students can interact with the guest speakers and communicate with other students and the instructor virtually anywhere in the world.

The advantage of this type of distance education is the convenience for the student. Students have open access for their class at any available time and may take their class work from home or work. This is particularly advantageous for the adult learner with time constraints. However, the disadvantage is that computer and software must be available to these students. Students without internet access from the school and/or corporate accounts may have to pay line charges through internet access services (i.e. America Online, PSI Net, Prodigy, CompuServe). These conditions may be too costly for some prospective students.

Ten years from now, talented university professors may develop whole courses in the form of multimedia lessons distributed well beyond their host universities to masses of students over the internet. These new products could combine video lectures with coordinated demonstrations on virtual blackboards and create a new class of academic celebrities, with top professors building worldwide reputations.

Star teachers and multimedia texts are just two aspects of the future that experts envision for higher education. The prognosticators differ on specific points in their forecasts, and some see the private sector positioning themselves in education. Some envision a rethinking of the traditional campus, and most see the school library eclipsed by online stacks. However, all the forecasts seem to revolve around one agreed upon premise: in the future geography is going to matter a lot less.

Education will change from a place centered enterprise to an "education whenever you need it" enterprise. Instructors can not remain stagnant in these waters of change. They must keep experimenting with the latest technologies and methodologies to enhance the learning experience.

They must continuously experience a renaissance in their skill bases and establish strategic collaborations with other professors to establish a "best practices" pool of knowledge. When the instructors stop the distance education process the students will go to another more advanced, more convenient, and more cost effective distance education program.

STUDENTS PERCEPTIONS OF DISTANCE LEARNING

"Students will vote with their feet," is very appropriate for the distance education program. Many students have great expectations, perhaps too great, for their distance education course. In a recent study (n=250), graduate business students were asked whether they would take another distance education course at their university: 40 percent of the students said they would, 20 percent said they would not, 10 percent said only if they changed the style of delivery and 10 percent said they did not know. It was interesting to note that the 10 percent of the students that stated that they would take another distance education course only if they change the style of delivery were asked an additional open ended question, "What would you change in the distance education course?" The largest percent of the students that answered this question commented, "I would enlarge the PowerPoint font size" (25 percent), "I would have the instructor move more" (15 percent) and "I would like to see more interaction with the students at the remote sites" (14 percent) (Olson, 1999).

The distance education students immediately know that there are differences between the traditional and the distance education classroom, which may cause some discomfort. There are cameras, a number of microphones on the tables or distributed around the room, television monitors are located in the front and the rear of the classroom, much of the lecture information will be displayed on a monitor or on a white board.

If the students are located at a remote site that will not have the instructor in the classroom, but will view the instructor on a monitor. In the above mentioned study on the perceptions of students who have experienced the distance education courses, over 55 percent stated that they would prefer a larger monitor than the one provided (Olson, 1999). The existing monitors were 35 inches and the study showed a preference for 55 inches or more. This is a simple remedy, however it is very rarely done.

The expectations of the students are directly related to their experience levels with distance education courses. "If other teachers in the (distance education) program have chosen to lecture, students may come to expect that all DE classes will be taught by the lecture method, and this expectation increases their natural reluctance to be on camera" (Fransson, 1999). The students that have the instructor present act very differently than the students at the remote sites. In the survey, students that were located at remote sites confirmed this behavioral change. Remote students surveyed (n=120) that 50 percent are aware when the instructor is viewing them, as their camera light is on. When the camera light is on they act differently and appear to be paying attention (33 percent). When the camera light is off, the remote students will only listen and pay attention when the lecture has some interest to them (45 percent). When asked what makes a distance education lecture interesting students responded, when the information is current (30 percent), when the instructor is animated (22 percent), when the materials can be used immediately (15 percent), and when the students are asking a variety of questions (14 percent).

It would seem from this small survey and the existing literature, that students do have distance education course expectations, as they should. Therefore, it would be important for the instructor to understand what those expectations are and try to fulfill them at the onset. However, not all expectations can be achieved, so it would also be important to articulate those expectations that can and those that can not be attained in the beginning of the course, so the unrealistic expectations are minimized.

FACULTY PERCEPTIONS OF DISTANCE EDUCATION

The faculty are one of the key ingredients to a successful distance education program. It would be most difficult to have a distance education course without a faculty member. The perception of faculty regarding distance education is that the distance education courses will not require as many faculty in the future due to greater amounts of technology and better forms of communication. A recent study (n=150) was conducted in Connecticut to determine faculty perceptions towards distance education programs (Olson, 1998). When asked whether the faculty who had taught in a distance education course would do it again, the faculty responded: Yes (42 percent), No (33 percent), I do not know (25 percent). Those that responded, "No" were asked an open ended question, " Why, not?" They responded with the following: "problems with the transmission" (52 percent) "too time consuming" (22 percent), "too stressful" (11 percent), "no recognition for the completion hard work" (9 percent), "more support staff needed" (5 percent) and "it was not worth it (financially)" (1 percent).

The faculty that do continue to participate in the distance education courses do go through a professional development. Fransson (1999) has identified four distinct stages of professional development: (1) becoming a television performer, (2) becoming a director, (3) becoming an assistant director, and (4) taking charge. Until this commitment is made by the instructor, the instructor will continue to have difficulties lost in a world of high technologies and pedagogical frustrations (Fransson, 1999). These difficulties and frustrations are real and have caused many good and seasoned professors to walk out of a distance education session shaking their heads in disbelief.

There is a distinct skill base that needs to be identified and developed by the instructor. According to Jarvis (1983) the desire to learn throughout the process is intrinsic to professionalism and one of the functions of a basic training program is to ensure that newly fledged professionals are aware of this ongoing need. Continuing education, ranging from the self-generated activities of an individual to formally organized, is therefore essential to any professional. It is this need to develop into a professional that needs to be emphasized by the distance education training sessions. The traditional teaching methodologies are not necessarily the better techniques in distance education. Holmberg's (1991) views of distance education as "guided didactic conversation" have been an important influence on the style of materials in distance education. Although distance education is provided at all levels, the majority of students, as well as the instructors, who need to be aware of the different skills needed to maximize the learning experience provided.

At all levels of professional development distance education can provide opportunities to instructors who would otherwise not be able to undertake courses requiring full-time secondment. In the UK, since the introduction of the Open University, instructors have formed a large group of distance education students. The Open University has been criticized concerning the lack of an interpersonal element in the learning (Kerry, 1996), their fears may be unfounded if, as its proponents claim, teacher education is "rooted in a theory of education as social practice" (Leach, 1996).

CONCLUSION

Distance education will not disappear, it is here to stay. As one senior faculty stated during a distance education faculty meeting, "...we may not like the fact that we will be teaching so many students, but the traditional class sizes of 28 and 30 students are no longer a viable economic model in higher education." We can not go back to the traditional methodologies, we must press ahead and embrace this brave new world of distance education with all the appropriate technologies and all the training to build and develop the faculty skill base.

Although there are some concerns on the part of business instructors, as well as business department administrators regarding the effectiveness of this type of education delivery, many universities are beginning to offer an increasing number of distance education classes. As Doucette (1993, p.22) stated, "...distance learning using independent learning systems and networking technologies to facilitate student-to-student and student-to-teacher interaction in a virtual classroom is the inevitable future of higher education..."

The future will be very difficult for the older more traditional universities to comprehend. As Peter Drucker stated (1996), "...the traditional universities are like dinosaurs, they will not survive the next educational revolution." Drucker may not have known what the next educational revolution would be, but he did know that it would involve a faster pace that many of the larger universities would not be able to maintain. Harry Gray, the former CEO of United Technologies Corporation, a 30 billion dollar, fortune 100 company, once stated, "...our large corporations are like super tankers. They take seven miles to make a 90 degree turn!" Today, you can not afford to be that slow, unless you have a crystal ball to see into the future. Technologies and distance education will continue to evolve and change is inevitable. The challenge will be for the university, the professors, the administrators and the students to work together and utilize the full potential of distance education. What is that full potential potential? Distance education should be used to expand the outreach of the university, not replace all the traditional classes. Those students that are not near a campus, or do not have time to travel to a course, those students are the target market. Distance education is not the solution, just another tool for higher education.

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DISTANCE LEARNING: WHAT POST-SECONDARY EDUCATION FACULTY REALLY *THINK* ABOUT IT

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Abstract

Technologies such as the Internet, especially the World Wide Web (WWW), have provided ways for institutions and faculty to deliver courses by unconventional methods. Course materials are delivered to students by videotape, compressed video (video conferencing), and the Internet / Web. Many students, and many people in the public at large, find this method attractive and beneficial. Faculty, however, have had mixed opinions about the use of Distance Education. This research provides an empirical investigation of faculty attitudes towards Distance Education. The results reveal faculty's opinions are evenly divided over issues such as pedagogical benefits and potential loss of instructors' jobs.

INTRODUCTION

New technologies have emerged that provide the opportunity for higher education courses to be delivered over the Internet. However, instructors are not universally embracing this teaching method. This research project will examine the responses to a recent survey of college faculty member and identify some obstacles toward greater acceptance. No large body of knowledge exists regarding faculty opinions of the online environment versus traditional classroom methods. This project will attempt to determine the opinions of faculty members regarding classroom technology in general and web-based education in particular.

DEFINITIONS

The following definitions cover terms used in this paper:

Distance Learning and/or Distance Education

These terms are used interchangeably in this paper. This means accredited college courses where non-traditional teaching methods are used which could include videotaped classroom instruction combined with internet-based submission of assignments, on-line communication with instructor, and possibly on-line testing. The class would rarely meet in a traditional classroom setting except possibly for testing purposes. Distance Learning *does not* mean a correspondence course.

Technology

In this research paper, the term technology refers to resources such as the computer and video projectors used together, information/resources gleaned from internet sites, and presentation software such as Powerpoint used for instructional purposes.

Survey

A group of subjectively structured questions for the purpose of gauging the opinions of those being surveyed in order to establish a database from which conclusions can be drawn.

PROBLEM

When it comes to distance education and the use of other technologies in the classroom, higher education has been reluctant to change its way of doing business. This is true at least partly because everyone has been secure in the value of the traditional professor-to-student instruction models. In somewhat of a paradox, professors also believe in the ability of technology to enhance and make positive changes in teaching and learning styles. For the most part, however, the influence of technology has not materialized in the classroom on a comprehensive scale.

Most business and service areas of society embraced the new technological options immediately with enthusiasm and the benefits to their operations were plain. Compared to other areas of society, however, educators appear to be more hesitant, as they slowly enter into the arena of technological change. There is growing pressure for higher education to match the technological advances experienced in other sectors.

Graduates entering the workforce know they probably won't be able to hold even basic jobs without intensive training in technology-based skills. Today's college and university students require approaches to teaching and learning that integrate up-to-date technologies.

Changes are taking place as reliance upon lecture-based instruction is switching to more cooperative learning supported by technology. Employers today are seeking graduates who can work in teams, communicate electronically, solve problems, and think critically.

METHODOLOGY

Over 400 full time faculty members at the University of North Alabama (regional university that does offer some Masters programs) and Calhoun Community College (two-year institution) were asked to participate in a survey during the fall semester of 1998. The survey was conducted in a hard copy, intercampus mail format with participation on a voluntary basis. The survey was not conducted in an on-line format because one of the principal objectives was to determine the reluctance of faculty to utilize computer information systems, and it was important to include any "technophobics" (people who avoid the use of technology) in the study. To view the survey instrument, see the Appendix A.

The study was structured to determine the respondent's resistance to distance learning and technology based on parameters such as: number of years teaching experience, the instructor's current position and background in distance learning, and to determine the obstacles to participation in distance learning.

DATA ANALYSIS

Department heads and full professors seemed to give politically correct responses, while Instructors and Assistant and Associate Professors seemed to give honest and truthful responses.

With regard to demographics, of the 410 surveys mailed and distributed the response to date has been a total of 84. By institution, of the 218 surveys distributed at UNA, 56 were returned for a 26% response rate. At Calhoun, from the 190 surveys distributed, 28 were returned, for a 15% response rate.

Most respondents had been teaching 11 to 15 years and were mainly Instructors or Assistant Professors; 90% of the respondents owned a personal computer at home and 95% had one in their school office.

On average, the respondents use computers at home 7 hours a week and 10 hours a week at their school office. Most considered themselves in the median group (3 to 4) of accomplished computer users. Again, there was an institution bias with department heads and full professors considering themselves fully accomplished computer users.

The most significant difference between Calhoun and UNA -- possibly due to the interests of the respondents -- was the disproportionate number of Calhoun respondents who had taken distance learning classes (25%) or who are teaching or have taught a distance learning class (29%). UNA respondents were 8% and 9% respectively. This data still indicates a substantial portion of the population at both institutions that have neither taken or taught a distance learning course.

About 80% of all respondents use the Internet at home and 21% of those that do participate in chat rooms and about 50% use on-line mailing lists. Over 90% of the respondents use e-mail at home. The vast majority of the respondents employ web technology in the classroom.

With regard to overcoming resistance by instructors to participating in distance learning, over 50% stated they would teach a distance learning class if: given more prep time, release time and additional money. When asked if all resources were provided for them--training, equipment, technology--web pages, etc. and all they had to do was provide the curriculum, only 41% stated they would teach a distance learning class.

The operative portion of the survey characterized the respondents' opinions of distance learning, information technology applied in the classroom and interaction with students.

Most responded that distance learning *will* reduce the need for instructors, and that more instructor preparation time will be required to teach a distance learning class. The majority indicated that learning by the students is *not increased* in a distance learning class versus a traditional classroom. Almost all respondents utilize the Internet as a resource or to present classroom material. Most utilize information technology in the classroom, and virtually all felt that IT is here to stay (most feel that use of such in class adds to the credibility of the presentation.) Respondents were divided as to whether e-mail was a more effective student-instructor communication tool than traditional conversation. Almost all state that interaction with students will be lost in a distance learning environment, and that is not desirable.

CONCLUSIONS

Several conclusions can be drawn from this survey of college faculty members. First, the respondents to the survey generally were not technophobic, 90% use e-mail and employ information technology in the classroom already. Nearly all consider themselves proficient with computers.

There is resistance to participation in distance learning rooted in the fear that this emerging teaching method will displace the instructors themselves. This resistance can be overcome by providing a complete distance learning set up (similar to that provided by the website Real Education.com) and/or providing additional compensation, prep time and release time. Also, there is resistance because the majority believe distance learning does nothing to enhance the level of learning for the students.

An additional source of resistance seems to be that so few instructors have taken or taught a distance learning class that they fear the unknown. This can be solved by providing them with more information about what distance learning really is (several indicated that it was a correspondence course).

The responses to this survey may prove useful in creating a new paradigm regarding distance learning so that instructors can feel more comfortable with this and other new teaching methods.

APPENDIX A
FACULTY TECHNOLOGY SURVEY

Gender ☐Male ☐ Female Age________
What level do you teach? ☐ Community College ☐ University (If so, ☐ graduate ☐ undergrad)
How long have you taught? ☐1-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ 20+ years
Which of the following applies to you?
☐ Instructor ☐ Assistant Professor ☐Associate Professor ☐ Full Professor ☐Department Head

Computer-Related

Do you presently own a computer for personal use? ☐ Yes ☐ No
Are you provided access to a computer at school? ☐ Yes ☐ No
On average, how many hours a week do you spend working on a computer at home? __________
On average, how many hours a week do you spend working on a computer at school? __________
Circle how you rate your level of computer expertise? (1 being a beginner and 5 being accomplished) 1 2 3 4 5
I have *taken* a course by distance learning. ☐ Yes ☐ No
I have *taught* or am *currently teaching* a course by distance learning. ☐ Yes ☐ No

Rate the following statements:

Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree or Not Applicable.

	SA	A	U	D	SD	N/A
I feel distance learning courses could decrease the need for instructors.	☐	☐	☐	☐	☐	☐
It takes more class preparation time to teach distance learning classes.	☐	☐	☐	☐	☐	☐
The use of technology *increases* students' learning.	☐	☐	☐	☐	☐	☐
Learning is *increased* through distanced education (tapes can be repeated, etc.).	☐	☐	☐	☐	☐	☐
Distance learning classes *without* the use of web technology (i.e.video taped courses only) increase students' learning.	☐	☐	☐	☐	☐	☐
I have used a Powerpoint presentation to convey course material.	☐	☐	☐	☐	☐	☐
I have used some resources found on the Internet for class.	☐	☐	☐	☐	☐	☐
I have used material on Internet sites in class to illustrate points my classes.	☐	☐	☐	☐	☐	☐
I use a video projector connected to my computer to present course material.	☐	☐	☐	☐	☐	☐
I do not use computer and/or web because of frequent equipment malfunctions.	☐	☐	☐	☐	☐	☐
I do not use the web or other technology because it takes too much prep time.	☐	☐	☐	☐	☐	☐
I think the web and computer technology is just a passing fad.	☐	☐	☐	☐	☐	☐
I would *not* enjoy having my classes video taped to create a distance education course.	☐	☐	☐	☐	☐	☐
My subject matter is not applicable to use with the web or computer technology.	☐	☐	☐	☐	☐	☐
By using current computer technologies in the classroom such as Powerpoint shows, and web resources, I appear to the students to be "on the cutting edge."	☐	☐	☐	☐	☐	☐
I feel distance learning courses increase the quality and quantity of communications between teacher and student and among the class members.	☐	☐	☐	☐	☐	☐
I would be able to communicate with more students using e-mail than in person.	☐	☐	☐	☐	☐	☐
I would enjoy teaching a distance learning class to avoid personal contact with students.	☐	☐	☐	☐	☐	☐

I use the Internet at home. ☐ Yes ☐ No
    If yes, I also use chat rooms . ☐ Yes ☐ No
        I use list serves at home. ☐ Yes ☐ No
        I use e-mail at home. ☐ Yes ☐ No
I would use web technology in the classroom if equipment and connections were provided for me. . ☐ Yes ☐ No
I would use web technology in the classroom if I could operate the equipment. ☐ Yes ☐ No
I would use web technology in the classroom if I knew how to find resources, etc. on the Web. ☐ Yes ☐ No

Inducements

If you were provided all the resources you needed—training, equip., tech.-web pages, etc -and all you had to do what was provide the curriculum, would you teach a distance learning course? ☐ YES ☐ NO ☐ Don't Know
If you were given more prep time would you teach a DL class ? ☐ YES ☐ NO ☐ Don't Know
If you were given release time to prepare, would you teach a DL class? ☐ YES ☐ NO ☐ Don't Know
If you were paid more money to teach a DL course, would you? ☐ YES ☐ NO ☐ Don't Know

APPENDIX B
FACULTY TECHNOLOGY SURVEY
RESULTS FROM Calhoun Community College

Demographics

Gender 39% Male 61% Female Average Age 46.5 years old

What level do you teach? 28=100% Community College

How long have you taught? 15% 1-5 years; 0% 6-10 years; 31% 11-15 years; 15% 16-20 years; 38% 20+ years;

Average length of time teaching: ______yrs.

Which of the following applies to you?

76% Instructor Assistant Professor Associate Professor Full Professor 24% Department Head

Computer-Related

Do you presently own a computer for personal use? 91% Yes 7% No

Are you provided access to a computer at school? 96% Yes 4% No

On average, how many hours a week do you spend working on a computer at home? 6 hours average

On average, how many hours a week do you spend working on a computer at school? 8.3 hours average

Circle how you rate your level of computer expertise? (1 being a beginner and 5 being accomplished)

1	2	3	4	5
10%	25%	18%	32%	15%

I have *taken* a course by distance learning. 25% Yes 75% No

I have *taught* or am *currently teaching* a course by distance learning. 29% Yes 71% No

Rate the following statements:

Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree or Not Applicable. All Nos. Percentages

	SA	A	U	D	SD	N/A
I feel distance learning courses could decrease the need for instructors	11	40	14	21	14	0
It takes more class preparation time to teach distance learning classes	07	43	25	18	04	03
The use of technology *increases* students' learning	0	54	39	07	0	0
Learning is *increased* through distanced education (tapes can be repeated, etc.)	0	25	39	36	0	0
Distance learning classes *without* the use of web technology (i.e.video taped courses only) increase students' learning	0	18	39	32	04	07
I have used a Powerpoint presentation to convey course material	21	36	0	11	04	28
I have used some resources found on the Internet for class	28	61	0	0	04	07
I have used material on Internet sites in class tc illustrate points my classes	25	43	0	21	04	07
I use a video projector connected to my computer to present course material	14	32	04	11	14	25
I do not use computer and/or web because of frequent equipment malfunctions.	0	08	18	42	14	18
I do not use the web or other technology because it takes too much prep time.	0	14	14	32	21	19
I think the web and computer technology is just a passing fad	11	7	0	32	46	04
I would *not* enjoy having my classes video taped to create a Dist. Ed. course.	07	12	18	42	07	14
My subject matter is not applicable to use with the web or computer tech..	04	11	07	50	21	07
By using current computer technologies in the classroom such as Powerpoint shows, and web resources, I appear to the students to be "on the cutting edge."	03	56	17	07	0	14
I feel distance learning courses increase the quality and quantity of communications between teacher and student and among the class members	0	11	46	21	18	04
I would be able to communicate with more students using e-mail than in person.	06	32	18	36	04	04
I would enjoy teaching a distance learning class to avoid personal contact with students	0	0	0	36	57	07

I use the Internet at home. 86% Yes 14% No
If yes, I also use chat rooms . 21% Yes 79% No
I use list serves at home. 40% Yes 60% No
I use e-mail at home. 96% No 4% No
Would use web technology in the classroom if equipment and connections were provided for me. 92% Yes 8% No
Would use web technology in the classroom if I could operate the equipment. 82% Yes 29% No
I would use web technology in the classroom if I knew how to find resources, etc. on the Web. 82% Yes 18% No

Inducements

If you were provided all the resources you needed—training, equipment, technology--web pages, etc --and all you had to do was provide the curriculum, would you teach a distance learning course? 75% YES 11% NO 14% Don't Know
If you were given more prep time would you teach a DL class ? 79% YES 07% NO 14% Don't now
If you were given release time to prepare, would you teach a DL class? 79% YES 07% NO 14% Don't Know
If you were paid more money to teach a DL course, would you? 3% YES 07% NO 10% Don't Know

APPENDIX C
FACULTY TECHNOLOGY SURVEY
RESULTS FROM University of North Alabama

Demographics
Gender 50% Male 50% Female Average Age 46.73 years old
What level do you teach? 100% University (If so, 37.5% graduate 81% undergrad)
How long have you taught? 9% 1-5 years; 25% 6-10 years; 9% 11-15 years; 28% 16-20 years; 2% 20+ years;
Average length of time teaching: 16-20 yrs.
Which of the following applies to you?
18% Instructor 40% Assistant Professor 18% Associate Professor 18% Full Professor 6% Department Head

Computer-Related
Do you presently own a computer for personal use? 86% Yes 14% No
Are you provided access to a computer at school? 100% Yes 0% No
On average, how many hours a week do you spend working on a computer at home? 7.1 hours average
On average, how many hours a week do you spend working on a computer at school? 10.6 hours average
Circle how you rate your level of computer expertise? (1 being a beginner and 5 being accomplished)

1	2	3	4	5
7%	23%	35%	25%	11%

I have *taken* a course by distance learning. 8% Yes 92% No
I have *taught* or am *currently teaching* a course by distance learning. 9% Yes 91% No

Rate the following statements:

Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree or Not Applicable.

All Nos. Percentages	SA	A	U	D	SD	N/A
I feel distance learning courses could decrease the need for instructors	5	36	18	25	16	0
It takes more class preparation time to teach distance learning classes	11	41	31	7	4	6
The use of technology *increases* students' learning	6	27	32	30	5	0
Learning is *increased* through distanced education (tapes can be repeated, etc.).	4	18	38	29	11	0
Distance learning classes *without* the use of web technology (i.e.video taped courses only) increase students' learning	2	17	53	12	14	2
I have used a Powerpoint presentation to convey course material	14	7	15	23	21	20
I have used some resources found on the Internet for class	36	54	1	5	4	.0
I have used material on Internet sites in class to illustrate points my classes	27	41	2	14	7	9
I use a video projector connected to my computer to present course material	12	9	2	39	20	18
I do not use computer and/or web because of frequent equipment malfunctions	2	12	5	38	32	11
I do not use the web or other technology because it takes too much prep time	3	18	13	32	25	9
I think the web and computer technology is just a passing fad	3	0	5	32	54	6
I would *not* enjoy having my classes video taped to create a Dist. Ed. course	21	25	18	21	11	4
My subject matter is not applicable to use with the web or computer technology	9	11	16	30	30	4
By using current computer technologies in the classroom such as Powerpoint shows, and web resources, I appear to the students to be "on the cutting edge."	13	34	21	20	5	7
I feel distance learning courses increase the quality and quantity of communications between teacher and student and among the class members	2	5	36	30	25	2
I would be able to communicate with more students using e-mail than in person	4	25	16	27	27	1
I would enjoy teaching a distance learning class to avoid personal contact with students	0	3	2	21	68	6

I use the Internet at home.	75%	Yes	25%	No
If yes, I also use chat rooms .	21%	Yes	79%	No
I use list serves at home.	56%	Yes	44%	No
I use e-mail at home.	90%	No	10%	No

I would use web technology in the classroom if equipment and connections were provided for me. 78% Yes 25% No

I would use web technology in the classroom if I could operate the equipment. 79% Yes 21% No

I would use web technology in the classroom if I knew how to find resources, etc. on the Web. 76% Yes 24% No

Inducements

If you were provided all the resources you needed—training, equipment, technology--web pages, etc --and all you had to do was provide the curriculum, would you teach a distance learning course? 41% YES 18% NO 41% Don't Know

If you were given more prep time would you teach a DL class ? 50% YES 20% NO 30% Don't Know

If you were given release time to prepare, would you teach a DL class? 51% YES 19% NO 30% Don't Know

If you were paid more money to teach a DL course, would you? 59% YES 20% NO 21% Don't Know

GLOBE: AN INTERNATIONAL, TECHNOLOGY-BASED INTERDISCIPLINARY PROGRAM

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Abstract

Global Learning and Observations to Benefit the Environment (GLOBE) is a worldwide network of students and teachers representing over 7,000 schools in more than 75 countries. GLOBE students collect atmospheric, hydrologic, geologic, and biometric data from the school's 90 by 90 meter pixel study site and report their scientific data to GLOBE and NASA/NOAA scientists via the Internet.

INTRODUCTION

GLOBE manuals are presently available in English, Spanish, Italian, French, and German. However, many of the international partners have translated GLOBE materials such as the teachers' guides, cloud charts and web pages into their native languages providing teachers with content curriculum that can be easily incorporated into their classrooms. The GLOBE program lends itself as a vehicle for learning Foreign Language, Mathematics, Technology, Social Studies, Geography and Culture, providing the perfect foundation for interdisciplinary study. GLOBE students have many opportunities to interact with scientists and contribute their data to actual scientific research. In addition, students generate their own questions, work with other students to conduct investigations and share their findings via the Internet. Students investigate a variety of questions, natural and social, by studying a 90 x 90 meter biology study site. They also have an atmospheric, soil, and hydrology site in which they work up a case-like report describing the area and noting seasonal changes in variables. These changes are documented and tracked over time. Students also collect and analyze documents for historic value of their study sites. Historical data can provide evidence of changes prior to the students beginning their investigation. Students develop a profile of their site and make recommendations concerning trends found in data collected.

PROGRAM DEVELOPMENT

The GLOBE program was introduced in 1994 by U.S. Vice President Al Gore, and officially began operations on the 25th Earth Day, April 22, 1995. The program as a whole is characterized by strong teacher and student enthusiasm, its adaptability to a wide range of grade levels and contexts, its compatibility with inquiry and collaborative learning, and its substantive educational use of the Internet (Finarelli, 1998). The GLOBE program is highly compatible with national science and mathematics standards. GLOBE materials also allow students to learn a second language in a content-based manner and the program effectively incorporates all 5 goal areas (communication, cultures, connections, comparisons, communities) of the National Standards in Foreign Language Project (1996). Students reinforce and further their knowledge of math, science, social studies and technology through the foreign language as they measure, calculate, report and enter data on the Internet. Students also have a means to engage in conversational exchanges with their peers in other countries who are conducting the same scientific protocols in their classrooms through organized GLOBE Web Chats as well as utilizing GLOBE-Mail, an e-mail system connected to all GLOBE schools. The GLOBE program provides a unique, hands-on setting for content-based K-12 language study through the age-appropriate educational materials and learning activities developed by more than 100 international scientists and specialists in environmental education.

MODEL GLOBE FOREIGN LANGUAGE PROGRAM

Students at McDonald Elementary in Moscow, Idaho have received international attention for their unique application of the GLOBE program, designated a *GLOBE Star School* in 1997. These students are in their second year of participation with the GLOBE program as a primary part of the school district's elementary foreign language program. The Idaho FLES program is a partnership between the Moscow School District and the University of Idaho's Foreign Language Department, Institute for Mathematics, Instructional Technology and Science (IMITS), and the College of Education. The FLES staff consists of Moscow School District teachers and administrators, community volunteers, and university faculty who collaboratively plan the curriculum. Native speakers from Spain, Mexico, Guatemala, Costa Rica, Colombia, Ecuador and other Spanish-speaking countries who are studying at the University of Idaho are teamed with pre-service Spanish language teachers, providing instruction to K-6 elementary students in the Spanish language for 30 minute periods three times each week on a Monday/Wednesday/Friday schedule. The 90-minute weekly FLES instructional periods concentrate on at least 95% of the class time spent in the Spanish language. Students conduct the GLOBE protocols as well as cover other concepts related to science, math and social studies through the medium of the Spanish language as specified by the regular classroom teachers. The GLOBE program does not constitute a curriculum within itself. It is a supplemental program and decisions on how to integrate the GLOBE curricula are made at a local level. Therefore, the regular classroom teachers contribute insight on curriculum direction by choosing the protocols that compliment their existing classroom content and learn the foreign language along with their students. Native Spanish-speaking community volunteers also assist the program and work directly with the pre-service teachers during instruction. A similar model for GLOBE implementation is currently being utilized in a FLEX program at a neighboring school (St. Mary's Elementary School) concentrating on the French, German, Japanese and Russian languages. For more information about these programs see http://ivc.uidaho.edu/fles.

GLOBE EVALUATION

SRI International was selected through a competitive grant process to provide GLOBE's evaluation component. The GLOBE Year 2 Evaluation (SRI International, 1997) reported that GLOBE science and educational activities help students reach higher levels of achievement in Science and Math. The program evaluation also reported evidence that involvement in GLOBE activities increases not just students' ability to take the environmental measurements and conduct the specified protocols included in the program, but also their ability to apply more broadly principals of sound sampling and data collection as well as data interpretation. In only 3 ½ years, the GLOBE Program has made remarkable gains in educational reform as well as increased environmental and cultural awareness in our world.

A major component of the GLOBE Year 3 Evaluation was a teacher survey administered in the spring of 1998 to a randomly selected sample drawn from the population of teachers who completed GLOBE training between June 1996 and December 1997. The evaluation team also conducted site visits to four U.S. GLOBE schools representing a range of implementation models and grade levels. Conducted between December 1997 and April 1998, site visits included interviews of teachers, observations of activities (including accompanying students to data collection sites), informal discussions with students, and, where appropriate, interviews with the administrators who had been instrumental in initiating the program within the school. When asked to describe their involvement with GLOBE during the 1997-98 school year, 65% of the SRI GLOBE survey respondents said that they had implemented the program with students. The respondents to the SRI survey indicated a diversity of settings in which GLOBE was implemented. Roughly one-third of GLOBE teachers implemented the program at the elementary level, one-third at the middle school or junior high level, and one-third at the high school level. International GLOBE teachers were less likely than U.S. teachers to be working within elementary settings. GLOBE was most often conducted as part of a regular class. 13% of teachers conducted GLOBE activities through informal education programs, clubs, or lunch programs. Teachers were asked to indicate which components of GLOBE they had implemented with students during the 1997-98 school year. Virtually all of the teachers who said on the survey that they had implemented GLOBE with students reported having their students collect data. Not all of the teachers whose students collected data had the students report them to the GLOBE Student Data Archive. However, 62% of teachers reported that they had students analyze, discuss, or interpret the data.

Teachers were also asked to rate the extent to which GLOBE had improved student skills and knowledge. Overall, GLOBE teachers viewed the program as very effective. Teachers reported the greatest gains in the areas of observational skills, measurement skills, ability to work in small groups, and technology skills. Teachers reported an increased ability to work in small groups, and an increase in students' technology skills.

Case study research in presently a major component of the 1999-2000 study currently being conducted at the GLOBE Foreign Language Program in Moscow, Idaho. FLES bilingual instructors in the second half of their practicum (Fall semester, 1999) will be required to complete case studies of the effect of the program in their classrooms. These case studies will be added to the quantitative data compiled to date by SRI.

CONCLUSION

Contributing to the scientific understanding of the Earth is one of GLOBE's primary goals. At present, it is too soon to judge whether GLOBE will make significant contributions to the scientific knowledge bases. However, according to SRI, at this stage of the program's evolution, more evaluation evidence is available concerning GLOBE's progress toward its second goal of supporting student learning in science and mathematics. Both observations of GLOBE students' activities and structured assessments of student work suggest that GLOBE can have a positive impact on students' ability to collect and interpret scientific data in classes where the program is implemented to a significant degree.

GLOBE's third goal, increasing environmental awareness, has been less straightforward to define and measure. In Year 2, the SRI found that GLOBE and non-GLOBE students were similar in terms of expressions of positive attitudes toward the environment. It was also found that GLOBE students appear to make more science-based, higher-level inferences about the natural world than do their non-GLOBE peers.

GLOBE is an ambitious attempt to put the concepts of authentic learning, student-scientist partnership, and inquiry-based pedagogy into practice on an unprecedented scale. The evaluation findings suggest that when well implemented by skilled teachers, The GLOBE Program has a positive impact on students' ability to do science and interpret scientific data. To fulfill its mission, the program wants to increase the number of schools implementing GLOBE with enough intensity to reap these benefits. GLOBE's ability to make further progress on both its educational and its scientific goals is likely to hinge on the quality of the supports provided for local programs. It is likely that Case Study Research can provide more insights into the impact of the GLOBE Program and its educational value to all students.

JOINING THE GLOBE PROGRAM

All GLOBE activities are conducted under the guidance of GLOBE-trained teachers. To date, GLOBE students have provided over 800,000 environmental data reports for use by the world science community. The first step in becoming a GLOBE teacher in your school is to attend a training workshop in your state. Schedules for workshops and registration forms are available on the GLOBE homepage at http://www.globe.gov. Information is also available from the GLOBE Help Desk at 1-800-858-9947.

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TEAM LEARNING WITH THE INTERACTIVE MULTIMEDIA MANAGEMENT SIMULATION

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Abstract

Interactive multimedia simulations provide an opportunity to use technology to enhance management education. Although the simulations are primarily used to teach business strategy to individuals, they can also be used to provide an interactive learning experience for student teams. The paper develops team learning theory and integrates it into the learning stages for multimedia simulations. The issues of using multimedia simulations in an academic setting with student teams are also discussed and guidelines are given to insure a successful educational experience.

INTRODUCTION

Project teams and team learning have been credited with helping businesses reduce manufacturing costs, shorten product development cycles and improve customer service. The effectiveness of organizations in using teams to solve problems seems to influence how rapidly a company can improve and become a more effective competitor.

Encouraged by the success of teams in businesses, employers have actively sought graduates with experience in working on teams during their educational program. Educational institutions with management and business administration programs have responded by building team learning and problem solving into their curriculums. Today, many programs include a component of team learning in the courses required for a degree.

A related development in management education has been the trend toward interactive teaching and experiential learning. Students no longer respond well to the passive learning environment in large lecture courses and increasingly they express a desire to interact in the classroom and apply the concepts learned in the courses they study. Internships, summer employment, course projects and management simulations have been used to bridge the gap between classroom theory and practical application. [Lamont and Friedman, 1997]

Recently, developments in information technology have further narrowed the distance between classroom theory and management practice. New interactive simulations, using personal computers and multimedia technology, are becoming available for use in management development and as course supplements in academic programs. Initially, the simulations seemed to offer a perfect response to the need to provide students with an opportunity to learn in teams in an environment closely simulating the practice of management. Yet, in spite of their exceptional promise and adoption in a few educational programs, little has been published examining team learning concepts in the format of multimedia simulation. The purpose of this paper is to:

1. develop a conceptual framework that integrates important team learning concepts with multimedia simulation.
2. discuss the issues in managing the use of multimedia simulations with student teams.

TEAM LEARNING IN MANAGEMENT EDUCATION

Students engage in learning by study or experience to gain knowledge and master a subject. Team learning in an educational setting involves the use of small groups in which students work together under the guidance of a professional educator to extend and apply their learning. [Herreid, 1998] [Michaelsen, 1992] [Michaelsen, Watson, Cragin, and Fink, 1982] In management education, the team effort is usually focused on the analysis of a case study, the preparation of a position paper, a student project with a business, or in this instance, the management of a business in a simulated market environment. Learning in teams is based on the premise that knowledge is gained and learning is enhanced when a part of the academic experience enables students to work together sharing, explaining and defending their ideas.

TEAM LEARNING THEORY

Learning in teams is grounded in the theories of intrinsic motivation and social interdependence. [Lewin, 1935, 1948] [Deutsch, 1949] According to the theory of intrinsic motivation, a state of tension within an individual motivates movement toward the accomplishment of desired goals. Lewin believed that individuals are made interdependent through the common goals of a group. Social interdependence explains the relationship among individuals where the interdependence results in the group being a "dynamic whole" so that a change in the state of any member or subgroup changes the state of any other member or subgroup. Social interdependence exists when each individual's outcomes are affected by the actions of others.

In any academic setting where social interaction exists, individuals may cooperate to achieve shared goals. Cooperation can occur in small teams when individuals work together to maximize their own and each others productivity and achievement. According to theory, a person seeks an outcome that is individually desirable and beneficial to all other team members. If team learning is carefully structured, individuals perceive that they can reach their goals if and only if other team members also do so. Their goal achievements are positively correlated and, consequently, individuals discuss their work, help and assist each other, and encourage each other to work hard for their mutual benefit.

From Lewin's and Deutsch's theories and the research of others, it has been concluded that the drive for goal accomplishment motivates team behavior. [Fandt, Richardson and Conner, 1990] The efforts to accomplish mutual goals tends to create positive tension, committed relationships and a joining of interests among the members of a team. The most frequently used term to describe this sense of commitment is cohesiveness. Teams become cohesive by working together in social situations on issues that involve problem solving, creative thinking and decision making. As cohesiveness increases, member commitment to group goals increases, feelings of responsibility to the group increase, willingness to take on difficult tasks increases, motivation and persistence increase and satisfaction and morale increase. Cohesiveness within a team is partly determined by how well the team members like each other, respect each others' knowledge and work together as associates. [Johnson and Johnson, 1989]

TYPES OF TEAM LEARNING

When student teams are used to accomplish academic goals, factors that promote cohesion should have a positive impact on performance. Team learning, because it involves sharing common knowledge in a social setting could be expected to lead to cohesive teams. Considering recent research on project teams in business environments, the following types of learning, leading to team cohesiveness, are relevant. [Lynn, 1998]

Generalized Learning by Individual Team Members

Generalized learning occurs as a result of a student's study and educational experiences. The acquired knowledge is what each person brings to the team learning assignment. This knowledge may have come from academic courses, classroom lectures in the course in which a management simulation will be used, reading, videos, internships, summer jobs and previous academic project or business experience. After team assignments are made, the knowledge is shared with the students that make up the team. Generalized learning may also include the effort of individual students to understand the concepts and operation of a management simulation prior to its assignment or prior to being placed on a team. Students who bring a wide range of general knowledge as well as some knowledge of the simulation to a team earn the respect of other team members and promote team cohesion.

Within-Team Learning

Within-team learning describes learning which occurs among the members of a team. It results from exchanging general knowledge as well as the understanding that is gained from the team's study and experimentation with a management simulation. This learning can occur during informal conversations among team members or during formal team meetings. Within-team learning differs from generalized learning because the knowledge is more specifically related to the course materials appropriate for the management simulation and the team assignment.

Cross-Team Learning

In using teams in academic settings, it is not unusual to reassign students to new teams and conduct another learning assignment. In management simulations, this occurs when an original team is formed to provide students with a practice period to learn teamwork and become familiar with a management simulation. Later, a new student team is formed which becomes the team of record for purposes of assigning most of the simulation grade. The knowledge gained by individual students that is shared with new team members leads to cross-team learning. The knowledge and teamwork skills transferred from the practice period is helpful in speeding the development of cohesion in a newly formed team.

MANAGEMENT SIMULATIONS AND LEARNING

Management simulations create simplified business environments which serve as a laboratory for learning and applying theory. In educational settings, simulations provide student teams opportunities to make management decisions, see the results of decisions and learn the application of concepts. [Alpert, 1993] [Burns and Gentry, 1992] Two different types of personal computer-based simulations are used in management education. Batch simulations describe those where business decisions are submitted by students to an administrator, who processes them on a computer and returns the results a short time later. Student teams use the time period between receiving the results and the deadline for the next set of decisions to deepen their understanding of the simulation and make changes in business strategy. Interactive multimedia simulations describe those where students operate the simulation at a computer terminal and receive almost instant results. The interactive feature of the simulation makes it more difficult to use for student teams because the learning occurs through continuous feedback. The traditional batch simulations ran on mainframe computers, but more recent versions have been adapted to computer networks and the personal computer. They are powerful and capture the competition and strategic interaction among firms managed by student teams in a simulated industry. After making a set of decisions, student teams receive the results for their firm on a terminal screen or as printed output. Repetition of the decision and output process enables students to compress years of operations into several weeks of an academic term. The newer simulations have proven suitable for individual student learning and very successful with student teams.

Almost all of the research with management simulations has been with batch simulations, so their contribution to learning has been widely studied. [Wellington and Faria, 1996] [Wolf and Chanin, 1993] However, establishing the educational effectiveness of simulations and the factors influencing performance has been difficult because the simulations are usually used with student teams, while the research has often focused on the characteristics and academic backgrounds of individual students. Researchers have reported mixed results with individual students and have generally concluded that no variables consistently predict performance on management simulations. [Gosenpud, 1987] It is reasoned that since management simulations are often used with teams, the impact of individual students on simulation performance is moderated by team participation. [Gosenpud and Washbush, 1991]

Some studies, however, have reported research in which simulations were purposively studied with student teams. The research has consistently found evidence supporting the notion that team cohesion is related to performance. [Wolfe and Box, 1988] [Meising and Preble, 1985] [Gosenpud and Meising, 1984] [Norris and Niehbur, 1980] [Wolfe, 1975] While the studies seldom provide a detailed explanation of how cohesion impacts team performance and learning, the results tend to support the early theory and suggest that further research might prove useful.

The new generation of CD-ROM multimedia simulations uses video technology and permits continuous operation by individuals and teams. In these interactive simulations, decisions are quickly linked with results and the learning experience can be compressed to an even shorter period. Because the design of the simulation encourages continuous operation, cursory examination may suggest a limited opportunity for team application. Additionally, the competitive aspect, where several student teams compete in an industry, is absent. The strategic interaction and competition among teams is not as evident because the outcomes are based on the strategy and decisions of a single team and the team's understanding of the models used to construct the simulation. Competition among teams is achieved only by creating an assignment where teams compete to achieve the best strategy and performance given a common set of simulation parameters.

The rapid response feature of the interactive multimedia simulation enables users to quickly experience the dynamics of managing a business. The new simulations also enable the user to replay decisions, thus encouraging experimentation and continuous operation to reinforce the learning. Very little research has been conducted on learning and team performance with interactive multimedia simulations, but in one study with undergraduate students the multimedia simulation was preferred by a wide margin over traditional, printed case studies. [Lamont and Schroer Lamont, 1997]

Harvard Business School Publishing is a forerunner in the development of interactive multimedia simulations. The Harvard programs, available since 1996, blend simulation and multimedia technologies with a systems perspective to create different business and market scenarios and provide a unique approach to learning management. [Teaching Methods, 1997] The simulations use text, graphics, sound and video commentary, financial records, coaching tips, and economic and management theory to teach students how to operate a business from an interactive control panel. With practice, students move from an intellectual understanding of how to apply theory to an operational understanding of knowing how to construct strategies in a simulated business environment. As students progress through the simulation making decisions, learning takes place because they master the simulation by applying concepts and experiencing immediate feedback on outcomes such as sales, profit, market share and customer satisfaction.

In research on batch simulations in management education, it has been observed that student teams progress through learning stages or phases as they move from a basic understanding of the simulation to a level where they are able to formulate sophisticated strategies that optimize simulation performance. [Gosenpud and Wolfe, 1988] Experience indicates that two learning stages describe the progression by which student teams master an interactive multimedia simulation.

UNDERSTANDING THE MANAGEMENT SIMULATION

Achieving a basic understanding of the simulation is a challenging assignment for most students because it is a new educational experience. Students are familiar with personal computers, but unfamiliar with the business and the markets that are modeled by the simulation. They must learn the basic concepts and acquire the information needed to understand and operate the simulation. In this first stage, students typically learn about the company, review an organizational chart, study financial statements, review management correspondence and listen to audio/video interviews with employees and customers. Soon, they develop an understanding of the concepts and definitions upon which the simulation is based, the variables used in the models and how the operating decisions are related to the performance of the business. Eventually, students begin to experiment with running the business from the interactive control panel on the computer screen. As students operate the business, they encounter a variety of responses to their decisions, suggesting the need for deeper and more systematic study. Achieving a basic understanding usually requires several hours of individual effort as well as a few hours of practice by a student team.

CREATING STRATEGIES AND OPTIMIZING SIMULATION PERFORMANCE

After students become comfortable with the basic operation of the simulation, they can work in teams to construct strategies to improve the performance of the simulated business. Through trial and error they apply the accumulated knowledge about the simulation to further explore the connection between resource allocation decisions and simulation performance. However, students may not yet be entirely familiar with the operation of the simulation when the parameters connected to the firm and external environment are changed. Optimizing the performance of the business is an evolutionary process where students learn about changes in market and business conditions and explore their impact on strategy and performance. Most simulations provide several scenarios to vary and enrich the student's learning experience. During this phase of team learning, students engage in higher level critical thinking and practice problem-solving skills.

At some point, students gain a sufficient knowledge of the underlying principles modeled by the simulation so satisfactory results become possible with much less effort. Additional improvements are incremental in the sense that changes in the simulation parameters require only a minor application of the knowledge previously acquired. Further team effort is devoted to optimizing business performance given the simulation parameters established for the team learning assignment.

MANAGING THE TEAM LEARNING EXPERIENCE

Two principles must be considered when using team learning with interactive multimedia simulations. First, consideration must be given to organizing the class into teams. Important decisions here are the team size and the selection of students to form the teams. The second principle is concerned with structuring a simulation assignment and evaluating team performance. Thoughtful decisions need to be made by the professional educator in each area to insure a successful educational experience and preserve the academic standards established for the course [Fiechtner and Davis, 1985]

THE OPTIMAL TEAM SIZE

Unlike batch simulations, where student teams make decisions, submit them for processing and wait for results, interactive simulations are more closely aligned to individual learning. The interactivity feature encourages students to review results and make new decisions without leaving the computer terminal, because much of the learning comes from reacting to simulation feedback as it occurs. For example, detachment is difficult because the results of decisions are often followed by coaching tips, provocative questions, customer complaints and management suggestions to encourage students to rethink recent decisions.

To decide the team size with interactive simulations, the simulation design and educational setting must be considered. Two-or three-person teams are probably the optimum size if the student team runs the simulation in a computer laboratory. When the team size exceeds three, it becomes crowded for students to view the computer screen while one student operates the computer to run the business. This problem can be overcome if students are encouraged to purchase individual CD's for installation on computers used outside the computer laboratory. Then, teams can meet in private rooms or university classrooms where students can more easily gather around a computer terminal. However, teams larger than four are not recommended. As team size increases, it becomes difficult for the members to arrange convenient meeting times and easier for some team members to let the serious students operate the interactive control panel. With fewer meetings and team members not intellectually involved, building team cohesion becomes difficult.

FORMING STUDENT TEAMS

Forming the student teams is an important issue because team composition impacts the learning process. Three approaches have been used; administrative assignment, student choice or a combination of both. [Fiechter and Davis, 1990] Each method has advantages and disadvantages, but the research suggests that assigning students to teams using administrative judgment has the advantage of establishing a business relationship between team members. Two guidelines should be followed when the administrator forms the teams. First, teams should be balanced considering academic abilities, relevant course work, work experience, academic majors, cultural background and race and gender. Building balanced teams using these factors stimulates creative thinking during early stages of strategy development. [Maznevski, 1994] Second, teams should not be formed in a way that creates a barrier to cohesiveness. One barrier to team cohesiveness can be a previously established social relationship or friendships between a subgroup of team members that excludes other members. Allowing students to form their own teams almost insures the existence of potentially disruptive subgroups and creates a potential barrier to within-team learning. [Roebuck, 1998]

SIMULATION ASSIGNMENTS AND INSURING THE PARTICIPATION OF TEAM MEMBERS

Simulation assignments should be designed so that students are evaluated in the areas of individual performance, team performance and peer evaluation. Each evaluation is necessary to insure the intellectual participation of team members and a meaningful educational experience. The three components should be weighted so it is clear to students that all are important in making an overall evaluation.

Individual Performance

An individual performance component is used to motivate students to acquire a basic understanding of the simulation prior to being assigned to a team. Multimedia simulations present an opportunity for individual exploration and operation of the business for a few quarters or up to five years. The learning experience can be completed in a short time; usually about three or four hours of individual work.

The evaluation of individual performance should be made by assigning a short paper, one or two single-spaced pages, in which the student must demonstrate understanding by preparing a situation analysis for the company and its market and a short description of a business strategy. For purposes of accelerating the learning, the simulation parameters should model a simplified environment. Students should be encouraged to operate the business over a short simulation period and describe a strategy they believe gives the best performance. The individual grade should be about twenty percent of the grade for the entire simulation assignment.

Team Performance

The team performance component provides the incentive for individual students to learn how to work in teams and practice within-team learning. Concepts such as leadership, trust, communication, conflict management, problem solving and decision making will have to be learned as part of the team assignment. To create the opportunity for cross-team learning in future simulation assignments, an interim team can be formed to help students learn teamwork skills and further refine the strategy for the simulated business. The interim team would work together for about three weeks to combine the individual strategy papers into an expanded, two-year strategy plan using a more challenging set of business and market conditions. The paper should include a situation analysis of the company and its market, financial objectives for a two year planning period, the strategy to be followed, a budget showing the resource allocation decisions, a pro-forma income statement, and a methodology for evaluating the strategy plan. Student teams should test several different strategies and prepare a four-page, single-spaced paper with a strategy that leads to outstanding performance. The team grade for this part of the simulation assignment should reflect the quality of the written paper and the team's business performance. Assign about twenty percent of the simulation grade to the interim team report. For the final part of the simulation assignment, new teams are formed and a more complex assignment is made. A five-year written strategic plan accompanied by a formal classroom presentation is a team-learning assignment that will enable a student team to use cross-team and within-team learning. Preparation and presentation of the strategic plan enables the student team to develop a long-term strategy and learn how to make the strategic adjustments necessary to optimize the performance of the business. The outline of the plan should be the same as that for the interim team assignment, but the simulation parameters should be set to create a more complex market environment such as an "S-shaped" growth curve or a "five-year" business cycle. The grade for this component of the course should be about forty percent including both the written strategic plan and its classroom presentation. The final student team papers and presentations should be assigned to be completed near the end of the course.

Using Peer Evaluation

Confidential peer evaluation is the last component used to assess the performance of team members. It addresses two important motivational problems. It provides an incentive for attending team meetings and participating in the preparation of the written report and presentation. Since each individual is rewarded by peers on his or her efforts, the peer evaluation helps to identify "free riders" and provides tangible data on how much each member contributes to the group. If students want a high peer evaluation, they must contribute to the team and not expect others to do the work for them. Several methodologies, including questionnaires, have been developed for peer evaluation with student teams. (Beatty, Haas and Sciglimpaglia, 1996) The formal peer evaluation can be a valuable component for assessing an individual's contribution if the team members spend a substantial amount of time working together and are able to assess the contributions of their peers. The grade for the peer component of the simulation should be about twenty percent of the simulation grade, split evenly between the interim and final team assignment.

USING INTERACTIVE MULTIMEDIA SIMULATIONS FOR TEAM LEARNING

Research suggests that learning theory can be applied to multimedia simulations and that team learning concepts can be used to help students progress through the learning stages and master the simulation. Careful attention to administrative details such as the simulation assignment, evaluating individual and team performance, and using peer evaluation are also important to insure a meaningful learning experience.

Based on the findings from research and the professional experience of the authors, the following six guidelines are appropriate to facilitate the effective use of multimedia simulations as course supplements in management education:

USE MULTIMEDIA SIMULATIONS AS COURSE SUPPLEMENTS

Multimedia simulations work best as course supplements when used in formal degree programs. They are highly effective for applying course concepts and providing a unique learning experience for individuals and student teams. To preserve the academic standards established for the course, the simulations should be limited to about thirty percent of the course grade. Some faculty will complain that team learning devalues course work and contributes to grade inflation. Professional educators must be careful to apply the same high standards to academic work produced by teams and individuals. Despite the best efforts, the team learning component of the course may unjustly reward some students who are able to ride on the efforts of others. This disadvantage must be weighed against the desirable team learning experience that the interactive multimedia simulation will provide.

USE TEAM LEARNING THEORY TO BUILD COHESIVE TEAMS

The literature consistently mentions cohesion as a desirable quality of high performing teams. Creating a positive classroom learning environment based on openness and the sharing of information and ideas will create favorable student attitudes and the motivation to engage in team learning. Once teams are formed, classroom time should be used to help students understand teamwork and team dynamics.

Instructors will find it helpful to discuss: (1) team leadership and the emergence of team leaders, (2) value differences and the art of compromise in setting team goals, (3) how to share knowledge in team meetings and consider the creative ideas of others, (4) appropriate and inappropriate team behavior, (5) how to use the individual strengths of students and (6) interpersonal relationships and communication skills.

MAKE EFFECTIVE USE OF TEAM LEARNING CONCEPTS

The current generation of students responds favorably to multimedia simulations. They find the simulations to be interesting, effective for teaching business strategy and suitable for team learning assignments. Because multimedia simulations are designed for individual as well as team learning, simulation assignments that make use of each team learning concept will result in the most meaningful educational experience for students.

DIVIDE THE SIMULATION LEARNING EXPERIENCE INTO STAGES

Multimedia simulations are complex and require considerable effort by individual students and student teams to master. Research suggests that students progress in stages as they learn a simulation. Use individual learning during the first stage when students are developing an understanding of the simulation and its operation. Once students have a basic understanding of the concepts, use within-team and cross-team learning to enable students to teach each other how to create business strategies and optimize simulation performance.

MANAGE THE TEAM LEARNING EXPERIENCE

Give careful consideration to the size and composition of student teams. Use small teams of three students so that each team can gather around a computer terminal and participate in the decision making process. Consider asking students to purchase their own copies of the CD-ROM simulation and install it on their own personal computers. This will enable students to continue individual learning after team meetings, conduct research and complete assignments for the next team meeting. It will also expand the possible locations and times for meetings. Select student teams using administrative judgment. Balance the teams by considering cultural and educational background and relevant work experience. Devote class time to teaching students about teamwork, conflict resolution, interpersonal communication and team cohesion. Actively manage the educational experience for each student team.

INSURE THE PARTICIPATION OF ALL TEAM MEMBERS

Structure simulation assignments to insure the participation of all students. As part of the assignment, discuss the design and operation of the multimedia simulation, provide a brief outline for each written paper, and provide written and verbal feedback on each assignment. Break the simulation assignment into parts so that the student's overall grade is based on individual and team performance and a confidential peer evaluation. Weight the parts of the simulation assignment so it is clear to students that each component is important. Require students and student teams to write business strategy plans using different (and increasingly complex) simulation scenarios and make a final presentation near the end of the course. Base the grade for the final strategy paper on the content of the written plan, the performance on the simulation and the professional quality of the presentation.

CONCLUSIONS

Interactive multimedia simulations designed for management education can be effective for individual and team learning. Although they appear to be best used for individual learning, they are very suitable for student teams if the instructor applies team learning theory and administrative judgment in their use. Figure 1 provides an overview of the important concepts that can be used to make the interactive multimedia simulation a valuable learning experience.

FIGURE 1
TEAM LEARNING WITH MULTIMEDIA SIMULATIONS

Learning Concept	Simulation Learning Stage	Simulation Assignment	Evaluation
Individual		Individual Assignment Situation Analysis and Strategy Description	Individual
\			
\			
/	Building an Understanding		
/			
Within-Team		Interim Team Assignment Two-Year Strategy Paper	Team and Peer
\			
\			
\	Creating Strategy and		
/	Optimizing Simulation		
/	Performance		
/			
Cross-Team Within-team		Final Team Assignment Five-Year Strategy Paper Classroom Presentation	Team and Peer

Professional experience suggests that interim and final student teams should be three members. Careful consideration should be given to forming teams so that participation of all students is insured. Use written assignments of increasing difficulty and apply rigorous academic standards to assign grades to students using individual, team and peer evaluation. A formal classroom presentation of the five-year strategy paper should be required of all student teams near the end of the course.

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THE PSYCHOLOGY OF LEARNING AND THE USE OF THE COMPUTER: A PRACTICAL SOLUTION

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Abstract

The psychology of learning and the use of the computer to provide a practical solution to promote learning were studied. The overview of the psychology of learning included the learning theories and conditions of learning, individual and cooperative learning, learning styles, and affective factors. Computer assisted learning as a practical solution to cater to needs was discussed in relation to learner, educator, and activity type program. Results indicated that computer use assisted students to perform significantly better than students without computer assistance. It was concluded that the computer integrated the learning theories and conditions and provided a guaranteed learning environment.

INTRODUCTION

With the use of the computer, the educator may hold in his hand the tool that may enhance his teaching methodology and increase the students' learning environment across all education levels. Education institutions need to recognize that the computer and its programs could influence the system of education.

Technology liberated both the educator and the student from the "bonds of one dimension learning" [Butzin, 1992, p. 94]. For cognitive growth to take place the student had to assimilate and accommodate information; he had to construct and invent operations; he had to observe and to imitate.

In short, the student tended to learn when he faced a learning activity; when his needs and purposes were determined; and when his needs produced in him a drive and motivation. These, in turn, produced the need for cues, information seeking, models and discovery opportunities, which, then, moved the student in the direction of the goal. Achievement progressed from familiar concrete grounds to unfamiliar abstract growth opportunities. The student was actively involved in the learning activity. Reinforcements of the desired behavior influenced the learning progress.

For learning to take place, a relatively permanent change in behavior was expected [Atkinson et al., 1996; Wingfield, 1979]. Thus, with knowledge of the student's characteristics and learning needs, the educator's role and needs, the environment, and the learning theories and methodologies, an educator accommodated and assessed the variety of learning styles to promote the student's motivation and satisfaction in the learning process. If one part was missing or was weak, both the learning process and the outcome would be threatened.

Research has suggested that repetition with feedback; reinforcement and practice developed habits and learning patterns that promoted success in achievement. Thus, the reinforcement of a desired behavior was an integral part of any classroom situation. Yet, realistically, reinforcement in the classroom situation may have been overlooked as were adequate practice time, rehearsal of different activities and restatement of learning principles. Add to those, overcrowded classrooms, different levels and different backgrounds of students, the educator, the teaching methodology, curriculum pressures, inappropriate teacher training.

In many learning situations, the ideal was not present. The same applied for the assumption that the student attended, encoded, retained the information and processed it according to his motivations. Educators, according to Pearlman [1993], many times were pressured to accept change without being prepared for it. Promoting effective learning conditions has remained a challenging dilemma for the educator.

Falk and Carlson [1992] noted that multimedia provided the educator with a means to explore teaching. Models using the computer would set up examples to allow the educator to create 'effective' learning situations [Anderson, 1993], relevant to the needs of the learner in society [Wray, 1990]. Technology that affirmed the learner, Askvov [1994] advocated, empowered him.

Dryer [1990] found that with the use of the computer, at risk students responded to teaching situations and were able to learn more effectively. Bennett [1996], in his research on high risk students and high school drop outs, found that 85% of the students, having received computer assistance, were able to pass the Test of General Education Development the first time they sat for it.

In examining the results of over 50 studies on the effectiveness of computer assistance at the higher education level, Kulik, Kulik and Cohen [1980] found that the test scores increased by an average of three percent points or about 0.25 of a standard deviation unit. And, in a few cases, they increased by about 15-70 percent. Moreover, Kulik and Kulik [1991] analysis of 254 studies of computer base instruction effectiveness noted that 8l% of students performed significantly better on exams having received computer base instruction; 94% of students favored computer based instruction as opposed to the other methods of learning, and that there were greater instances of positive attitude change amongst students who had experienced computer use.

The group process variable in computer assisted research has been overlooked [Bahr and Rieth, 1991]. Baron and Abrami [1992] noted that most research had been observational in nature, focusing primarily on the social effects of the computer use.

Glass and Smith [1979] contended that group size negatively affected a student's performance, especially when the group size was small. However, Johnson, Maruyama, Nelson, Johnson and Skon [1981] advocated that group learning in a cooperative learning situation in a reward structured learning atmosphere was superior to individual reward structures.

Gunterman and Tovar [1987], in their study on the effect of group size using the computer, found that with groups of two or three students at a computer, there was no significant difference between the groups. The interpretation was that the "group score" attained may have been an "individual score". They concluded that there was no significant difference between the groups' achievement.

According to Skinner [1990], computer assistance has been used successfully to aid the teaching of many subjects at the higher education level: Language learning [Sabieh, 1998; Becker, 1984], writing [Schulz, 1993], chemistry [Cavin, Cavin & Lagawski, 1981], mathematics [Becker, 1984], and health professions education [Cohen & Dacanay, 1992]. Pre-college schools also used computers principally in skill building drills in mathematics and language arts [Becker, 1984].

To date, very 'few' studies have investigated the use of computers as a tool and/or a tutor to enhance learning [Kulik & Kulik, 1991]. Moreover, research studies attempting to link the psychology of learning to the use of the computer have been minimal if not altogether absent. Specifically in Lebanon, a study investigating the use of the computer as a tool and/ or tutor to enhance learning has not been conducted, nor has a study related the psychology of learning to the use of the computer.

The present study provided an examination of the psychology of learning and the use of the computer to provide a practical solution to promote learning amongst students. The following questions were posed: Was a computer effective as a tool and/ or tutor because the learning theories and conditions were an integral part of its makeup? Would a student perform significantly more effectively when assisted by a computer than a student who was not exposed to computer assisted learning? Would a computer provide a student with a learning environment? To find answers, the study was carried out twofold.

First, the researcher carried out an in-depth overview of the psychology of learning. That included exposing the learning theories: the mental, the behavioral and the cognitive approaches; and viewing learning in relation to Piaget's theory of cognitive development, learning as an information processing theory, and learning according to Gagne's conditions. That led to a comparison between individual and cooperative learning, and to considering both individual learning styles and affective factors needed. Finally, differences between a child and adult learner were considered.

Second, the researcher examined computer assisted learning as a practical solution to cater to all needs. The computer—a tool or tutor—was exposed as a delivery system, motivator and powerful tool to provide a climate for effective learning to take place. The computer was discussed in relation to the learner, the educator and the activity type program use to show effective performance results within a given learning situation. It was hypothesized that:

1. Computer assisted students would achieve significantly higher scores on an achievement exam than students who had received only classroom instruction, and
2. Computer assisted students in a cooperative group instruction method would achieve significantly higher scores on an achievement exam than students who had only used the computer individually.

The subjects were attending a remedial English course in a private university. The two types of computer activity programs were to be used: Drill and Practice, and Tutorial. The study was designed and executed in order to yield statistically significant differences: Computer use with no computer use; individual computer use with cooperative computer use in learning outcomes, when comparing adult learners in the four learning conditions.

PART ONE: OVERVIEW OF PSYCHOLOGY OF LEARNING

A change in a learner's insight, in his behavior, and/or in his perception that may have been due to the accumulation of knowledge over a lifetime [Atkinson et al., 1996], or to a behavioral disposition that occurred as a consequence of experience in some specified situation [Bigge & Shermis, 1992] resulted in what is understood by learning. Early research on learning was conducted from a behaviorist approach [Wingfield, 1979]; however, learning research now included cognitive and biological frameworks [Atkinson et al., 1996]. Educators adopted an overall comprehensibility of how learning took place and integrated the different approaches, came up with their own 'learning theories based on their investigation' to provide the students with more effective learning environments [Bigge & Shermis, 1992].

THE LEARNING THEORIES

Three major learning approaches existed: The Mental, the Behavioral and the Cognitive. The mental approach influenced the development of the other two approaches; the behavioral and the cognitive. The difference between them stemmed from disagreements over the fundamental nature of man and his relationship to the environment and the nature of motivation and perception [Bigge & Shermis, 1992].

The mental approach encompassed the mental discipline, natural unfoldment or self actualization and apperception [Bigge & Shermis, 1992]. The mental discipline involved strict training of the student's mind to remain active; a student was continuously drilled to learn recognition, to increase attention and intrinsic mental power, to strengthen perseverance, willpower and his neutral but interactive nature. On the other hand, natural unfoldment (or self actualization) emphasized the learner's responsibility in the process of learning as opposed to the environment. According to the maturation sequence, the learner's desire to learn came first before his learning or skill building was increased. Apperception enforced the idea of the active mind, keeping the concentration on the idea-centered learning as opposed to subject centered learning. Association with past and present ideas paved the way for future knowledge acquisition and enrichment.

The behavioral approach advocated that for learning to take place, a response had to be observed. A bond was formed between the stimulus and the response. The stimulus was from the environment, and the response was a physical reaction to either external or internal stimulation. The conditioning situation included reinforcement or non-reinforcement contingencies based on innate reflexes and drive stimuli. [Bigge & Shermis, 1992].

The behavioral approach encompassed the stimulus-response bond, classical and operant conditioning theories. Bonds were made, associations formed, habits developed and behavior acquired. The stimulus-response bond connections and transfers could be made within specific stimuli and response conditions and with many other related conditions through trial and error. Moreover, the strength of the S-R bond was developed, using classical conditioning, without the presence of reinforcement. The individual's innately learned to pair an unconditioned stimulus to a neutral stimulus to draw out a conditioned response. However, using operant conditioning and the power of reinforcement, the individual developed his own response and, thus, his own learning [Wingfield, 1979]. A response took place contingent to the reinforcement received by the individual [Gage & Berliner, 1992]. The reinforcement gave the push in the desired direction and enhanced the individual's status, worth, positive self image, confidence [Atkinson et al., 1996; Gage & Berliner, 1992].

The approach de-emphasized the role of the individual within the learning process. Comprehension of the total learning situation was not necessary; each part could be treated separately, and then related to the other parts until the learner performed the desired outcomes. Skinner [1969; 1989] advocated that the key to effective teaching was immediate feedback. He believed that the individual's thought pattern was operant, and not reflective, behavior [Bigge & Shermis, 1992].

The cognitive approach stemmed from apperception and emphasized learning as a process. The individual actively interacted with his environment to grow mentally. The approach encompassed goal insight (Gestalt), linear cognitive interaction (social learning), and cognitive field interaction. Goal oriented, the individual, in any learning situation was part of a whole configuration. He transposed tested insights and knowledge. Learning was considered an exploratory, imaginative and creative process. Social learning, moreover, emphasized that the individual observed, interpreted and imitated others. He received informative and incentive value feedback on the learnt behavior, and evaluated himself. For learning to be affective, four conditions had to be met [Gage & Berliner, 1992]. The individual had to attend to the situation, retain it, and reproduce it when needed and be motivated to do so. The cognitive field interaction, furthermore, added 'insight' to the individual-environment unit. The individual perceived and related the perception to his total experience, goals and skills, restructuring his thought and knowledge to his interpretations and expectations [Bigge & Shermis, 1992].

Piaget's theory of cognitive development was based on an innate genetic orientation; the cultural learning factors came in second to explain how an individual learnt. An individual developed in four successive stages that depended on how he processed his thought at certain age periods. Mentally, an individual grew from concrete to abstract reasoning and problem solving. It was through the acquisition operations that an individual grew intellectually. At each stage of cognitive development, an individual actively constructed and invented, building up his schema by assimilating and accommodating information and by interpreting.

According to the information processing theory, information processing was done consciously. It was individualistic. The individual by way of an external stimulated environment received information. That, then, activated the individual's sensory receptors; visual, auditory, tactile senses with which to register and transfer the sensation into neural information to be perceived and stored for a time period of one to two seconds. In turn, the information was selected and encoded, and it was given meaning, which was transformed into schema where assimilation and accommodation took place. He, then, determined if the information was to be stored in his memory or was to be responded to. The individual had to determine which mode of response was needed; be it verbal, or motor; sequenced and timed, to answer the environment. The individual controlled himself and his environment to be able to plan, initiate, guide and terminate behavioral and cognitive activities. Therefore, an individual selectively attended to the information based on the degree of precedence the information had in relation to his learning needs and motivation.

For any learning to take place, that meant there was the existence of a memory. The information was encoded and stored for a short or long time period in an individual's memory, and it was retrieved from there. In accordance with the Dual Memory theory, information could also be transferred to the long term memory from the short term memory [Atkinson et al., 1996]. In short term memory, the information was usually encoded acoustically or visually, whereas, in long term memory, the information was usually given meaningful and imagery connections, was elaborated upon and was organized during encoding [Gage & Berliner, 1992; Alessi & Trollip, 1991]. Rehearsal kept the information alive.

LEARNING CONDITIONS

Learning, according to Gagne [1970], was a conscious processing of information based on a synthesis of the learning theories. He advanced eight effective learning types, each with its own set of conditions [Gagne, 1985]. He identified five inherent kinds of learning pattern categories in the learning conditions. Accordingly, the individual had intellectual skills, cognitive strategies, verbal information, motor skills and attitudes that he used when he faced any one of the different learning conditions.

Gagne's first four types of learning included signal learning, S-R learning, chaining, and verbal association. First, signal learning involved the association between a new stimulus and a response; second, S-R learning involved responding in a precise manner to satisfy a stimulus. By giving the individual feedback and reinforcement, they shaped the desired behavior. Third, chaining involved sequencing stimulus response events where learning the final behavior depended on earlier learning responses in the chain. And, fourth, in verbal association, the individual named and defined terms, even if he was not able to understand them.

The last four types of learning were more cognitive oriented, and complex. The types were discrimination learning, concept learning, rule learning, and problem solving. So, discrimination learning had the individual differentiating among different stimuli used in the S-R events. And, concept learning involved the individual in being able to classify the events using appropriate language to represent characteristics of the concepts. The rule learning condition involved linking concepts/items together based on rules of cause and effect. And, in problem solving, the individual was involved in combining rules to acquire new situations based on a goal. The information was processed depending on the individual's ability to meet the learning condition.

Gagne also included nine instructional events to declare his information processing model of teaching. Accordingly, an event had to attract, inform, stimulate recall, clearly present the stimulus, provide guidance, elicit performance, provide feedback, and enrich retention and transfer of material.

If all those steps and conditions were met, the individual was able to learn using explanatory understanding [Gagne, 1985]. Along with the individual's inherent ability, the learning conditions and the ability to process information, the individual was considered an effective learner.

INDIVIDUAL AND COOPERATIVE LEARNING

In any learning situation, an individual learns individually or cooperatively in a group. In an ideal teaching situation, educators integrated activities that promoted both autonomy and cooperation amongst the learners.

Alone, an individual worked at his own pace, to accomplish learning goals unrelated to the other learners [Sabieh, 1995; Johnson & Johnson, 1994]. He was evaluated and rewarded for his effort by comparing his performance, quality and quantity, to the preset characteristics/outcomes. His success was dependent only on his intrinsic motivation [Wingfield, 1979], his self interest, his abilities and his autonomy [Greenwood, Wasson & Giles, 1993].

Group success and dynamics depended on positive interdependence, face to face interactions, individual accountability, social skills and group processing, on a common goal and purpose, on an informal climate, on active participation, listening, civilized disagreements, open communication; confidence building, defined roles, shared leadership, self-assessment, individual skills, and knowledge [Greenwood, Wasson & Wiles, 1993; Sabieh, 1994; Johnson & Johnson, 1994].

In cooperative group learning, an individual accomplished outcomes that were beneficial for him and to the other group members as well. An ideal group size was from two to four individuals [Johnson and Johnson, 1994].

INDIVIDUAL LEARNING STYLES AND AFFECTIVE FACTORS

Fry & Kolb [1976] identified four individual learning styles. An individual tended to be a diverger, an assimilator, a converger or an accommodator. The diverger dealt with concrete situations using reflective reasoning; the assimilator, on the other hand, dealt with abstract thinking using reflective reasoning in a learning situation. The converger preferred to deal with abstract thinking, but he was actively involved in the learning situation.. On the other hand, the accommodator preferred concrete thinking and active involvement in a learning task. He used trial and error to find the best suitable outcome for any activity. In short, all learning styles required the individual to master the learning situation or activity, whether it was individual or cooperative.

The individual learning styles promoted personal growth, self esteem, self actualization, success, confidence, and competence.

CHILD AND ADULT LEARNER

The characteristics of an adult learner differed from the characteristics of a child [Knowles, 1980]. In relation to the theory of Cognitive Development, the child reached abstract reasoning by twelve years of age whereas an adult had the ability to think in the abstract and to problem solve in a complex manner. The adult learner was independent, self directed in his learning [Weible, 1982], a decision maker [Larsen-Freeman & Long, 1991]. The adult student had previous experience from school, from work, from "life" that served as rich resources. He made decisions pertaining to his own life, his current social roles and his tasks. He preferred problem oriented approaches as opposed to subject oriented learning approaches. He wanted to experience the autonomy in learning and to be able to tackle activities in the same ways that he would tackle them in real life. He valued time. Basic information—subject oriented—was of little use to the adult if he could not use it to enhance the learning situation.

Thus, in advocating to take on a more eclectic outlook on the way the adult or child learnt, the researcher believed it would promote a more harmonized synthesis. The educator could draw, select, and modify knowledge, without compromising the ideas, from the different theories, conditions and styles to fit his present situations to ensure that an individual received an effective atmosphere of learning. With the integration of computer assisted learning, the educator would provide the learner with the needed atmosphere.

PART TWO: COMPUTER ASSISTED LEARNING

The second part examined computer assisted learning as a practical solution to cater to all needs. Research dating back to the late fifties pointed out that not only could the computer assist the learning disabled, mental handicapped, and behaviorally or emotionally disturbed students, but also the mainstream students. In the present study, the computer assisted learning was discussed in relation to the learner and the educator, and to the activity type programs.

COMPUTER ASSISTED LEARNING

The computer acted as a delivery system, a motivator, and a power tool [Phillips, 1985]. Learning took place through the computer as it was designed to motivate and increase interest in the task. Exploited properly, the computer was a powerful tool. It increased individualization and promoted active participation in learning.

Computer assisted learning or computer based instruction meant the use of the computer to teach an individual. It did not mean teaching an individual how to use a computer nor did it mean teaching an individual about computer technology. Bork advocated the use of the computer to accomplish concept mastery, self paced instruction and learning and to test results; Dwyer advocated exploratory learning solo; Papert advocated intuitive thinking; Suppes advocated its use in specific skill related subject, and Luehrmann advocated to fight illiteracy across many teaching areas [Taylor, 1980]. One example in which computer assisted learning showed a positive relationship was with the promotion of a learner's linguistic aptitude [Forrest & Wrigley, 1993].

Computer Assisted Learning is classified into three categories: Tool, Tutor and Tutee [Taylor, 1980]. As a tool, the computer aided or facilitated the academic work or learning situation. As a tutor, it delivered instructional or learning material. As a tutee, it was a medium in which the individual taught the computer and, as he did so, he learnt as well.

The present study explored the use of the computer as a tool and tutor as the practical solution to enhance learning. Holmes and Kidd [1982] noted that computer programs being based on man-made designs and predetermined feedback options were not able to account for the complexities and variety of language creativity, and, thus, were limited to deal with creativity and/ or problem solving venues realistically. The activity types considered in the study was Drill & Practice and Tutor computer assisted learning programs. Mastery of the computer as a tool was not needed alone. It was an instructional tool rather than a teaching tool [Alessi & Trollip, 1991]. Masterying the computer use with the computer program was what was needed.

As a tool and tutor, the computer could be used by the individual independently or cooperatively in a group; could be individual or group paced; could be used for practice or for problem solving situations. It could also be used for remedial or for mastery purposes. It was adaptable to meet the needs of the learner and the educator within the environment.

The learner needed to emancipate his own learning limitations, to communicate his needs, to have his affective and personal needs and to master skill and grow cognitively within his world. The educator needed to find effective methods and tools to teach with, to promote learning, and to ensure adequate time for mastery of skills, to be aware of student problems and weaknesses, to know what the learner's needs, aspirations and motivations where.

The computer gave the learner a direct, conscious, interactive relationship, responsibility to control material presentation and to control and master his own learning [Ives, 1991], immediate and informational feedback, feeling of accomplishment, self esteem [Kluger & Adler, 1993], intrinsic and extrinsic motivation & rewards [Morrison, Ross, Gapalakrishnan & Casey, 1995], autonomy, freedom to decide on his performance [Bennett, 1996]. Moreover, it gave the learner recognition and respect from his instructor, peers and family because he self fulfilled his learning needs. The computer gave the teacher a tool to enhance the teaching and learning of the student. The teacher became the organizer, the mediator between the computer and the student, the facilitator of instruction, the resource consultant, and the motivator. The teacher would have more time to spend with other students who needed his aid. The educator would encourage [Levesque, 1989], support [Hyland, 1993] the learner as well as select, present, create, manipulate, organize, apply, introduce, organize, and discuss learning tasks.

ACTIVITY TYPE PROGRAMS

Activity types were developed for use on a computer depending on the needs of the learner, the program, the education level, etc. [Higgins & Boone, 1993; Underwood, 1993]. Some such activities were Simulation, Problem Solving, Games, Text Construction, Tests, Drill and Practice—with or without remediation, and Tutorial.

Simulation, Problem Solving, and Games were associated with higher order learning skills. They were more exploratory [Holmes & Kidd, 1992], and maintained active learning, privacy, freedom and skill application as did the Drill and Practice and Tutorial categories, but they allowed for more conceptual and abstract thinking [Duffield, 1991].

Simulation type of activities modeled real complex situations; Problem Solving type of activities set a student up with a problem, which involved communication to reach a solution. Game type activities engaged the student in a purposeful activity to accomplish an end.

Drill and practice type of activities was designed to build skills. It provided information, guided development and understanding, provided practice, and feedback. Its sole function was to provide practice to sustain, refine, and perfect knowledge of a subject matter [Geisert & Futrell, 1995]. The item was selected, displayed, and responded to; the program judged the response, and gave the learner feedback about the response. The activity type allowed learner control and termination control, had item characteristics, provided item difficulties, item variety, pacing, feedback, motivation, subject review, maintained performance level, and promoted automatic learner response. Tutorials were also basic skill instruments to be used by the learner to enhance his learning process.

A Tutorial activity exposed a subject matter that was needed by the student. It presented a brief introduction of the subject, the information, and the elaboration. Then, it asked questions that the learner responded to, and provided assessment and feedback, guiding towards its acquisition. Most tutorial activities stopped at that stage; however, practice items and response assessments were also provided at times to improve the student's acquisition process.

The same characteristics that applied to the Drill and Practice activity type program applied to the Tutorial program; however, a learner did not have similar item type selections. Furthermore, a tutorial utilized the student's prior knowledge and provided further subject remediation.

Kemmins [1977] distinguished five different types of learning in computer assisted learning programs. The learning styles were recognition, recall comprehension, experimental learning and constructive understanding. The first three types of learning were basic to use in the Drill and Practice and the Tutorial activity type problem. The last two types could not be attained if the first three had not been acquired [Sabieh, 1998].

Thus, to be effective, the learning environment needed to account for the possible link that existed between the learning theories and the computer as a tool and tutor. Moreover, meeting the student's and teacher's needs alongside what the computer could provide needed consideration to add strength to the overall teaching and learning challenge educators face daily.

METHOD

SUBJECTS

The subjects were 76 French-educated adults attending a remedial English course at a private university. They had completed the formal secondary schooling years. The sample size compared positively with other studies on learning [e.g. Skinner, 1990; Hooper, Ward, Hannafin & Clark III, 1989; Grabe, Petros & Sawler, 1989; Bahr & Rieth, 1991; Hamdi, 1989]. The subjects received 76.5 hours of English language exposure.

APPARATUS

The subjects sat for the pre- and post-test of English, used IBM compatible computers and Drill & Practive and Tutor English Language Activity Programs, and, attended the same English Language Remedial Program.

DESIGN

The study was carried out as a two-group longitudinal pretest-post test design. Scores on the pre- and post-test were interval scaled to allow for parametric statistical analysis to be done to test the hypotheses.

The two groups were randomly assigned: The control group was exposed to teacher-oriented learning settings while the experimental group was exposed to both the teacher-oriented learning settings and student-oriented learning settings using the computer as an aid to enhance their own learning. The experimental group was further subdivided into two groups; randomly assigned, one subgroup had the subjects working individually on the computer, and the other subgroup had the subjects working cooperatively in groups.

PROCEDURE

The subjects sat for a pre-test of English to ensure that they were homogenous. Randomly, the subjects were assigned to one of the two groups. The subjects assigned to both the teacher-oriented learning settings and student-oriented learning settings using the computer as an aid to enhance their own learning were randomly assigned to use the computer as a single users while others were paired off randomly to use the computer together in a group.

The subjects who needed to be taught how to use the computer and programs were taught to do so. During the first computer session meeting, subjects were given the freedom to explore on their own—to familiarize themselves with the computer and the programs available for use. They were told that, at the beginning of each session, they would be given the new work assignment to be completed at their own speed. Throughout the sessions, subjects worked alone or in groups asking for help from the researcher only to facilitate the dilemma when need be.

Seven to eight weeks later, upon completion of the remedial course and the computer sessions, the student sat for the posttest.

RESULTS

HYPOTHESIS ONE

H_{01}: $\mu_c = \mu_{nc}$ (Computer assisted students would not achieve significantly higher scores on an achievement exam than students who had received only classroom instruction)

The null hypothesis one was rejected. At a 95% confidence level, there was a significant difference in the improvement of the achievement exam scores between the students using computers to assist them in learning and students who had received only classroom instruction; $t = -4.53$, $p < 0.000$.

TABLE 1

Significant t-test results to show difference in the improvement of AE average scores between computer use and no computer use students.

Variable	No. of Cases	Mean	t-value	df	2-Tail Sig*
Computer 0	37	0.7054	-4.53	74	0.000
Computer 1	39	11.3077	-4.49	63.09	0.000

N= 76, α= 0.05

Furthermore, the analysis of variance testing the same null hypothesis showed a significant main effect for the use of computer to assist students in learning, $F = 21.11$, $p < 0.000$, with the students' pretest scores on the achievement exam considered as covariates.

TABLE 2

Analysis of Variance to show significant main effect for use of computer to assist in learning.

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F*
Covariates	2879.066	1	2879.066	43.681	.000
PRETEST	2879.066	1	2879.066	43.681	.000
Main Effects	1391.378	1	1391.378	21.110	.000
COMPUTER	1391.378	1	1391.378	21.110	.000
Explained	5013.349	2	2506.674	38.031	.000
Residual	4811.520	73	65.911		
Total	9824.869	75	130.998		

N= 76, α= 0.05

HYPOTHESIS TWO

H_{02}: $\mu_{cg} = \mu_{ci}$ (Computer assisted students in a cooperative group instruction method would not achieve significantly higher scores on an achievement exam than students who had only used the computer individually)

The null hypothesis two was not rejected. Hypothesis two posited a relation between the way the students used the computer—individual or group—and performance on the achievement exam. The results showed no support in the different types of instruction usage. At a 95% confidence level, there was not enough significant evidence to support the difference in the average of AE scores of the students who used the computer individually or in a group setting, $t = -0.69$, $p < 0.494$.

TABLE 3

T-test results to show insignificant difference between the AE average scores of students using the computer individually or in a cooperative setting.

Variable	No. Of Cases	Mean	t-value	df	2-Tail Sig*
Group 11	22	10.5591	-.65	37	.522
Group 12	17	12.2765	-.69	34.44	.494

$N = 39$, $\alpha = 0.05$

DISCUSSION

The computer provided the student with a guaranteed learning medium in accordance with the learning theories and conditions. A change in the student's insight, in his behavior, and/or in his performance was noted from the results. The achievement exam scores of the students who had used the computer to enhance their learning were significantly higher than those who had not received the computer assistance.

THE PSEUDO VIEW OF THE LEARNING PROCESS INTEGRATED

Individualized learning had been achieved. There had been active and interactive training on the part of the student. He was drilled to learn recognition, to increase attention and intrinsic mental power, to strengthen perseverance, and willpower. He was made responsible for his own process of learning and for his own master and self-actualization within the learning medium. With a curious nature, active mind, and knowledge, his desire to learn came first since it was he who had enrolled in the remedial course. That then paved the way for him to increase his learning or skill. As his knowledge grew, as his cognitive ability unfolded, the association with past and present was enriched.

In short, bonds were made, associations formed, habits developed and behavior acquired through stimulus-response conditions, feedback and trial and error attempts. Innately, individually, he conditioned himself to meet the demands of the activity, developing his own response and drive. His affective needs were met; he gave value to himself, his self image. confidence and esteem took on a more positive outlook as the sense of accomplishment based on performance increased significantly. His role as a student found definition as part of a greater equation for learning. Each part with in it was treated separately to ensure its presence, but all together it made up what created the effective learning environment outcomes. The reinforcement, immediately after each item, gave the student the push in the desired direction since his immediate response was operant. With continued feedback the learning endeavor became a process in which the individual's goal was self set and thus, self accomplished based on how actively he responded, observed, interpreted, imitated sequenced, classified, combined and transposed. Motivation and incentive directed the student's actions, pace, and practice.

Constructing and inventing within the activity varieties built schema by assimilating and accommodating newly acquired or reinforced information. The student, in accordance with Swales [1994], internalized the information in such a way that it became meaningful to him: With the help of the computer, it was consciously inputted, encoded--encoded visually and semantically--and stored in his long term memory to be retrieved when the need arose. At his own pace, in an unthreatening and relaxed environment, the student decoded and coded activities, building and reinforcing his schema for growth and cognitive maturation. Practice and rehearsing kept the information alive.

The student internally self regulated his answers based on external self regulation; the environmental, the given information, his prior knowledge, the level of involvement, were considered as an integral part of his learning process [Kim, 1992]. He paced it to accommodate for his weaknesses and for his mastery.

Some of the tasks were straightforward; others were more challenging. The student at times had to be passive and at times, active. The integration of the tasks addressed the different learning styles allowing the students to increase their feeling of accomplishment, esteem, and competence for the future since they were actively involved in overcoming the weaknesses or challenges placed in front of them.

With the use of the computer, the students, in fulfilling what Adler [1982] advanced as steps to competence achievement, experienced, but to a lesser extent, the stress and anxiety they would in any learning situation that would put responsibility on them to achieve competence and mastery.

THE INDIVIDUALIZED APPROACH IN COOPERATIVE LEARNING

When the students were grouped together to accomplish a common goal, the results did not show any indication that cooperative learning took place. There was no significant difference found in the achievement exam scores between the students who worked individually on the computer and those who worked in cooperative groups. It was true that the students shared a common goal—but the fulfilling of the activities did not require the individuals to be interdependent on each other to guarantee the goal.

Together, they worked to understand, help or tutor, but the achievement was measured solely by the student's subjective interpretation of his mastery. Elements for cooperation were available; however positive interdependence and individual accountability must not have been perceived by the students even though ideal group size, in accordance with Johnson and Johnson [1994; 1986), was established.

THE RECOMMENDATION & FUTURE RESEARCH CONSIDERATIONS

In conclusion, the computer guaranteed a learning medium. With it, learning was enhanced because of the student's self training, actualization, and active participation, the immediate and private feedback, the personal growth within a non-threatening, non-judgmental social environment, the individualized approach, present even in a cooperative learning medium, and the integrated individual learning styles.

Adopting the researcher's pseudo view of the process of learning, based on the link made between the computer and the learning theories and conditions, she proposed the use of the computer as the environment medium across the education system, especially with adult learners. She believed that the use of the computer to enhance learning was the ideal tool of empowerment; it simplified, evaluated, and met the different achievement levels. The learning process remained a personal one, relating to each student's needs and his environmental factors present to enhance the mastery of acquisition.

The perceived limitations to the study could be considered as future research consideration. Could performance or cognitive growth in the learning process have been time limited or was it in accordance with Piaget's theory of intellectual development? The computer provided the student with immediate feedback, but was that totally dependent on its software design and how simple or complex the program design objective were or was it really reflective of the student's knowledge level? Was the quality and type of software program choice available for use in relation to the educational objectives and needs? Would using problem solving or simulation activities promote learning in the same way as Drill & Practice and Tutorial programs? Would cooperative learning be guaranteed with a change in activity types to show significant difference in student achievement? Was the pseudo view of the learning process realistic to adopt by educators as a possible approach? Would the computer be effective for use across all educational settings, curricula, and subject matter?

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THE ROLE OF CASE STUDIES IN STUDYING COMPUTER TECHNOLOGY IN EDUCATION

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Abstract

This paper examines the contribution of case studies in understanding how teachers and students use computer technology. The value of computers in education is controversial, with some researchers contending their worth can be proven only through quantitative studies that compare learning through technology with traditional forms of instruction. Although we accept the premise that comparative research has a place in understanding computers, such a singular focus is too narrow. Case studies offer unique perspectives about what can be achieved with computer-based learning; equally important, they provide an opportunity to examine the contextual nature of technology implementation.

INTRODUCTION

In a recent article, Jones and Paolucci [1998] addressed the learning effectiveness of computer technology. The essence of their argument was that although vast amounts of money are spent each year on information technology, little is known about its effectiveness as an educational delivery vehicle. The issue is not new as Clark [1983] questioned the value of media, including computer technology, by arguing that it was the method of instruction rather than the media that fosters learning. A key aspect of the argument made by Jones and Paolucci was that too many studies into the effectiveness of computer-based learning."...tend to be in a qualitative form with little formal research support." This critique is then buttressed by a call for more formal research that is quantitative in nature and designed to measure learning outcomes. At one level we appreciate the position taken by Jones and Paolucci because the costs of technology are high, but at another level we believe they ignore important questions and issues. So-called 'race horse' studies are complicated by classical experimental design and statistical analysis issues, but the use of computer technology within an overall educational framework raises unique problems.

The first problem with their position lies with a simplistic interpretation about how education is carried out in the real world of schools, especially at the elementary level (Grades K-8). Jones and Paolucci [1998] appear to want researchers to compare the effectiveness of delivery systems, for example, a computer based mathematics program compared with a similar or comparable text-based curriculum. However, opportunities for such comparisons are rare because few subjects or topics are taught in an exclusive manner. Consider two key instructional areas in elementary education, reading and writing. They often are taught together, that is, a reading activity such as novel study might be followed by journal writing where students would respond to the book. On other occasions, a science or social studies lesson might serve as a starting point for skill instruction, perhaps in reading comprehension. Further complicating the situation is that two more language arts, oracy and listening, are important concomitants in fostering reading and writing. Typically, these are class-based activities involving human interaction, and even teachers who make extensive use of technology engage students in speaking and listening in whole or small groups.

Another problem with comparative studies is the nature of computer technology. Potential ways of learning through information technology sometimes have no counterparts in traditional learning, and the use of the world wide web represents an example. Today, students may create class or personal web pages as a part of a content unit or a computer project. These web pages may inform readers about an environmental studies project, introduce the local community, or offer profiles of students. In schools throughout the world, students collect data about the environment, observe bird migrations, and discuss international issues with peers, and each of these activities uses the world wide web in a unique manner. Given the lack of traditional counterpart activities, how would learning in such an environment be measured? Many educators believe that computer applications such as the world wide web represent important contributions to learning. Indeed, in an article that challenged some of Jones' and Paolucci's ideas, Dusick [1998] asserted that learning through computers and about technology have useful long range consequences that are outside the delivery issue. She described a technology rich world where learning skills such as word processing, spreadsheets, data bases, programming, and internet publication have independent value because of the growing use of technology in all aspects of life, and mastery of these applications or understanding of their potential uses cannot be measured by contrasting them with something else.

A final issue that calls the Jones and Paolucci [1998] challenge into question focuses on how computers live in classrooms. There are two dimensions here. First, computer technology is not static, especially in public schools. In schools today it is not difficult to find computers made in the 1980s placed alongside the latest internet capable, networked machines. Printers are not different in this respect, and some students are using dot-matrix printers while others have access to recent color laser machines. The availability and quality of software are similar to that of hardware as some schools are using programs with limited features while others make use of the latest interactive technology. For example, it is not unusual to observe some children using word processing packages that allow only basic functions such as text insertion, basic formatting, deletion, and printing; at the other end of the continuum, students compose with multimedia programs that permit the importing of pictures and movies, add voice to text, animate characters, provide background music for stories, and offer support utilities such as grammar tutors and spell checkers. So what is being compared?

The second dimension of the issue relates to the manner in which teachers use computers and computer software. Jones and Paolucci [1994] seem to assume that a standard or universal way of using technology exists. Moreover, they seem to want to study the computer as an object instead of one variable interacting in a complex environment, the classroom. Studies show that even when seemingly standard pieces of software such as integrated learning systems (ILS) are selected by school boards, teachers use them in different ways. In an investigation of how teachers used the SuccessMaker ILS, in consort with other software, Miller, DeJean, and Miller, 1998] found important differences among participants as to how they reacted to technology, the amounts of time children were assigned to programs, and the nature of teachers' interactions with students as they engaged in computer-based learning. Time was one of the major variances the researchers discovered, and teachers differed greatly as to how they scheduled children at the computer. Some students learned only from SuccessMaker, and they completed ILS lessons three or four times each week, but other teachers used a wide range of software so students were exposed to a richer variety of learning packages, but these students worked on the integrated learning system only once or twice a week. Comparative studies attempt to create situations that are equivalent, except for the dependent variables. However, as this case study showed, creating comparable learning settings in schools is tricky business.

THE CASE FOR CASES

The observations made in the previous paragraph bring us to the essence of this paper, that case studies make unique contributions in understanding the role of computer technology in education. Using our case studies, which began in the 1980s, as well as those of colleagues, we will describe examples of the types of contributions that this form of investigative tool may provide in understanding how computers live in schools. These examples encompass the following topics: a) understanding the possible, b) informal or unintended learning, and c) examining complex interactions involving computers, children, and classrooms. Case studies frequently have been used to help understand educational phenomena, and their roles and applications have been diverse [Kenny and Grotelueschen, 1984]; however, our paper will be delimited to the topics mentioned here, recognizing that we are capturing only a small portion of their potential. Moreover, this paper will not delve into the complex issue of what constitutes a quality case study in education, referring readers to recognized texts on this topic [Stake, 1995; Yin, 1989]

Understanding the Possible

Jones and Paolucci [1998] were critical of one specific type of case study that is found frequently in the literature on classroom uses of computer technology--the lighthouse project. They focus on the fact that qualitative investigations dominate these types of projects, and the authors go on to point out that, typically, the only quantitative component of such reports deals with participants' enjoyment of or satisfaction with the delivery channel. We could add to their concern by pointing out that many of the reports on lighthouse projects are written by persons with a stake in the outcome. Perhaps even more disconcerting, from a practical stance, is the tendency for corporate sponsors to withdraw support once the beacon project is complete. The Vivarium Project, led by Alan Kay and supported by Apple Computer, represents an example of what happens when the 'white knight' leaves [Armstrong and Casement, 1998]. In 1996, Armstrong and Casement visited the school that housed the project, and they describe old and failing equipment as well as disillusioned teachers and administrators. Much of the principal's time was taken up by trying to find replacement funds for the missing corporate donations, and teachers spent an inordinate amount of time repairing computers. However, despite the problematic nature of these undertakings, the criticisms ignore an important aspect of innovation--the exposition of the possible.

Lighthouse projects were initiated to put the thinking of technological innovators, or they were established by corporations that had an interest in propagating computer-based learning. In the latter instance, the Apple Classrooms of Tomorrow (ACOT) projects, which began in 1985, sponsored or supported the creative uses of technology in schools. The ACOT, which were designed to explore the thinking that might be fostered when students participate in learning through new information technology, were computer rich, and most of the teachers involved in these projects received both special training and substantial technical support [Sandholtz, Ringstaff, and Dwyer, 1997]. Many reports emanating from ACOT projects were positive, describing how teachers and students from Grades K-12 used computers in interesting, productive ways [Gooden, 1996].

One such project was carried out at P.S. 125, the Ralph Bunche School, which is located in Central Harlem, New York City. The project was led by Paul Reese, a dedicated teacher who was named 'Educator of the Year' by Electronic Learning magazine. With the support of Bank Street College, Apple Computer, and the National Science Foundation, teachers in Grades 3-6 initially used computers to enhance the science curriculum. Working collaboratively, students studied weather patterns and installed a weather station on the roof of the school. Students gathered daily weather data and shared it with others through a networked data base. As an exemplar of the type of learning that can transpire in such a setting, Gooden [1996] describes an incident where the students were following the path of a hurricane by using National Weather Service reports and comparing them with data they gathered. Their data predicted the hurricane would move out to sea and not strike the New York coast, which contradicted the prediction of the National Weather Service. The students were right. Gooden goes on to tell how the teachers at Ralph Bunche expanded the use of computers outside the science curriculum to include spreadsheets, sharing email, and creating a student newspaper that took advantage of the latest features of technology-based composing tools.

Papert's development of the LOGO computer programming language [Papert, 1980], which was not created to turn children into programmers but, rather, to serve as a tool to encourage constructivist learning is another example of how innovative thinking was made manifest through beacon projects. Sometimes these projects focused on a particular type of learner [Weir, 1987], while in others the emphasis was on a subject such as mathematics [Hoyles and Sutherland, 1989] or on a particular grade level [Carmichael, Burnett, Higginson, Moore, and Pollard, 1985]. Books were published that reflected particular perspectives such as language [Goldenberg and Feurzeig, 1987], art [Clayson, 1988], mathematics [Cuoco, 1990] or computing science [Harvey, 1987]. In many cases the emphasis was actually on the language itself [Lehrer, Littlefield, Wottreng, and Youngerman, 1993; Muller, 1997]. Regardless of the emphasis, there was an underlying commonality across these projects of emphasizing and respecting the learner and setting up learning situations that encouraged the active exploration of alternative approaches to a particular problem or task. Such a philosophy is at variance with much established practice and with the experience of many classroom teachers. The flurry of interest in LOGO, which took place in the 1980s, represents one of the largest global attempts to incorporate computer technology into school curricula, although there is little left today to mark these efforts. In the last few years there is an impending sense of deja vu as the Internet and the World Wide Web take center stage.

What we have described indeed represents the possible, but there is more to the issue because many lighthouse projects failed to influence day-to-day classroom practice. Interestingly, the reasons why some of the predicted or desired educational transformations did not occur also were revealed through case studies. The case of LOGO is an example. Despite the promise and early excitement about the potential of LOGO to impact teaching and learning, interest waned, and today its use in schools is not widespread. Initially, criticism was directed at the underlying philosophy or learning theory guiding Papert's ideas, but a reexamination of case studies that followed teachers' and children's use of LOGO over many years and in various educational settings revealed one of the prime reasons for the diminished interest--a lack of congruency with normal curricula. Many educators did not understand Papert's ideas about learning or curricula, as evidenced by their focus on the 'turtle'. As Papert [1980] pointed out, he wasn't concerned about the turtle; he saw it simply as a vehicle for Piagetian learning, and, as Papert stated, "which to me is learning without a curriculum" (p 31). Learning without a curriculum is not a familiar idea for most teachers, and both the visionary and those carrying out studies based on his vision failed to recognize this incongruity. Furthermore, studies carried out with kindred spirits as instructors tended to mask the anomaly. It is only through a retrospective examination of these case studies that this problematic aspect of LOGO was discerned. Today, in both Europe and North America, curricula tend to be designed and mandated by central educational administrations: at the state, provincial, or even country level. Furthermore, the values of these curricula often are measured by standardized tests or other formal measures tied directly to curricular objectives. Therefore, innovative ideas such as those espoused by Papert tend to encounter a built-in barrier.

Informal or Unintended Learning

A case study carried out by Blackstock and Miller [1989/90] and two others conducted by DeJean, Miller, and Olson [1997] and Miller, DeJean, and Olson [1996] uncovered a seldom researched aspect of educational technology--informal or unintended learning. As classrooms became more technology rich, children were given the opportunity to engage in computer-based learning on a free choice basis. These occasions, where children selected any program they wished, usually occurred at lunchtime, recess, after school, or when students finished other activities. The researchers did not plan to investigate informal or unintended learning in any of these investigations, but as they watched children gather around computers, reacting to the programs with both serious intent and glee, it became clear that these situations offered a unique opportunity for study.

One of the first things noted in each of the above mentioned case studies was a tendency for students to select programs that seemed to be too sophisticated or difficult for them to use. In the Schools, Computers, and Learning Project (SCL) [Blackstock and Miller, 1989/90], the favorite program was Offshore Fishing, a computer simulation designed to serve as a component of a unit on the Maritime Provinces of Canada. Normally, this unit would be studied in the junior grades (Grades 4-6); however, it was the clear choice of Grade 1 children in Sharon Jensen's classroom. In the CD-ROM Talking Books case study [DeJean et al., 1997; Miller et al., 1996], one of the most popular free choice programs was a CD-ROM entitled da Vinci. This program gave information about da Vinci's life, art, inventions, and writings; again, the researchers wondered why primary level students, in this instance Grade 3, would select a program clearly designed for older students.

The answer to the question concerning why students selected these programs had two facets. In both instances, the programs had a game component. In Offshore Fishing, the idea was to drag or trawl for various types of fish or crustaceans while in the da Vinci CD-ROM there was a game that demonstrated one of his inventions. Such a discovery is hardly novel as one visit to the local arcade would reveal the popularity of computer games; however, the story is not finished. As mentioned, Offshore Fishing is a complex simulation and students must maneuver the boat to leave port, keep track of fuel consumption, locate fish with sonar, and select fishing variables such as the type of net, depth of water, and season. Where did Grade 1 students get such information? Many of the children had brothers and sisters in higher grades, and when they walked home from school the younger students listened to them talk about the simulation, and once they started to use Offshore Fishing, the younger siblings asked specific questions about how to manipulate various features. During this Project, we came to learn much about how information was shared among students, and the existence of a computer subculture was a key discovery, but another form of learning was equally important. The children tended to gather in small groups of two, three, or four students. While one student would manipulate the trackball and keyboard, the others would offer advice concerning decisions. Often, a strong reader would pair with a student who seemed to have a good intuitive sense of how computer programs worked, and together they would fish. Much has been written about how computers might foster collaborative learning within the classroom environment, but there are few reports of how collaboration might influence learning in an informal setting.

How students learned about computer programs was one aspect of these studies, but what children learned from them was even more important. Through daily observation and researcher led discussions with children using the Offshore Fishing simulation, it was discovered that students were creating hypotheses about where fish were found, the nature of sonar, and which areas on the map yielded the best catches. The hypotheses floated, that is, they were adjusted as the children gained more experience with the program, and they were modified on a continual basis. Moreover, the hypotheses were informed by fuzzy knowledge, that is, an understanding of certain phenomena that was at variance with scientific explanations but reasonable given the developmental level of the children and the information available. For example, several children thought that sonar called the fish, which is a sensible explanation because the simulation displayed sonar as a series of pulsating waves descending to the bottom of the ocean. The waves would then bounce off the fish and register on the sonar screen. Another explanation forwarded by the students, equally plausible, was that the sonar was a light, which enabled the fisher to see the fish.

Sometimes, the hypotheses of children surprised or confounded the researchers. Students frequently talked about 'sharkie', and where this denizen of the deep could be found. Only a few children claimed to have located sharkie, or netted the monster, but those who did held status among peers. To the researchers, sharkie took on the mantle of the Loch Ness monster, visible only to the true believers. The shark challenged researchers' notions about the sophistication of children's floating hypotheses because it seemed to be based on non-existent rather than fuzzy knowledge. Moreover, children seemed to search for sharkie in unlikely places and conditions. For example, one student, who had a Captain Ahab obsession with the shark, always selected winter as the season to fish and chose the most difficult level of play. The situation was even murkier because this child was one of the weaker academic students in the class. The conundrum was solved because of a chance conversation with the computer consultant for the SCL Project. When told of the situation, and how it put the researchers' notions about the nature of children's thinking in question, he said, "Of course, those are the only conditions where the shark appears." It seemed that through the computer subculture, as well as hypothesis testing, this so-called weak academic student worked out the key to finding the shark.

Examining Complex Interactions Involving Computers, Children, and Classrooms

We concur with Mehan [1989] that computers are part of a larger social system, and the relationship between the classroom and information technology are mutually influential rather than unidimensional. Several thinkers have identified a technocentric society, which prompts the computer to be studied as an artefact, as one of the barriers impeding discovery how technology might best be used in classrooms [e.g., Watson, 1998]. Related to this idea, Bowers [1988] pointed out that technology is not value free, and some perspectives of how computer technology would reform education created much anxiety, especially among teachers. It is easy to understand this consternation as some visions appeared to be based on contempt for teachers and schools as much as a view of the positive aspects of technology. Indeed, the often used term 'technological reform' implied past practice was somehow flawed or inadequate, but teachers did not appreciate being told they would become obsolete or reduced to the status of learning managers.

If the idea that computers are just one component of learning embedded in a larger educational setting is accepted, case studies are an ideal tool to examine the nature of the interactions among teachers, children, and computers. Consider a frequently cited aspect of using technology--the role of experience. Some teachers have adopted an attitude that technology, rather than constituting a dynamic development, will eventually become static, and the turbulence that often accompanies the introduction of an innovation will subside. Blackstock and Miller [1989] captured this attitude by quoting a teacher who said "Let me know when you get all the problems worked out of this technology stuff, and then I'll get computers in my room" (p. 3.). Case studies disclose that as long as technological developments are dynamic, the idea of acquiring all the answers to the effective use of this medium is but a dream. However, these same case studies reveal that experience with computers has a salutary effect on subsequent use. In other words, those teachers who were willing to dip their toes in the water by using Commodores, Acorns, Apple IIs, and other early machines learned lessons that had beneficial consequences when more potent and sophisticated computers were developed.

Burnett, Blackstock, Miller, and Warkentin [1989] followed two teachers' use of computers over an extended period of time. This case study was not designed to make invidious comparisons between the 'expert' teacher and the neophyte; indeed, both teachers in the investigation were experienced and highly regarded by parents, administrators, peers, and students. The key difference between these two competent instructors was that one had extensive experience with computers, dating back to use of Apple IIs, while the second was engaging her students in computer-based learning for the first time. Some of the traits of the neophyte user were: (a) a tendency not to interact with students while they engaged in computer-based learning except to deal with technical problems, (b) reverting to past practice if difficulties were encountered, and (c) a lack of awareness of the full potential of technology, especially in terms of how some software programs might supplement or enhance the normal curricula. The researchers also observed the teacher tended to call for outside help when technical difficulties were encountered.

The experienced teacher also was using new information technology; however, because of prior experience with older model computers and less advanced software, different traits emerged. First, this teacher demonstrated confidence in his ability to solve technical challenges, and although this belief was not always rewarded by success it was the attitude that distinguished him from the neophyte counterpart. Second, the teacher organized the class schedule and routines to make maximum use of the equipment given the time available. Little time was spent on instruction about how to use programs; instead, students were expected to explore and progress toward mastery. Third, and perhaps most importantly, the experienced teacher was cognizant of how computer technology could be used as an integral aspect of the normal curricula. This point does not mean the inexperienced teacher never saw this connection although it often appeared to be an unintended rather than purposeful relationship [Miller and Olson, 1994]. Each of the above features of the experienced teacher's use of computers evolved. There was no revolution, but, gradually, the teacher learned about how machines work and how they lived best in his classroom.

The researchers applied their observations to the ideas of Toffler [1980], who used the metaphor of waves -- first, second and third -- to describe how computer expertise was acquired. A good example of second and third wave use was revealed with the introduction of new word processing packages into the experienced teacher's classroom. Students used the composing programs to publish a newspaper, but the important point to mention here is that he had been developing a writing program for over five years, including composing with word processors. His first wave use consisted of the generation of personal newspapers, each four pages long, and written and illustrated by hand using traditional tools such as pen, pencil, and ink. Second wave evolution focused on the introduction of Apple II computers to the process, and in this instance students created newspapers that ranged from 16 to 24 pages, with hand drawn illustrations added through a cut and paste process. The third wave iteration of learning found the teacher a recipient of more advanced technology, including laser printers. This technology would hardly be thought of as 'current' in today's world, but the essence of lessons learned from the case study have little to do with the impact of the hardware or software itself.

The effects of experience with information technology also emerged in a year long case study of teachers' and children's use of an integrated learning system [Miller, DeJean, and Miller, 1998]. With the support of a government grant, a school board located in eastern Ontario decided that all primary level classrooms would use the SuccessMaker integrated learning system. The grant meant that each classroom had at least two networked computers, and most had three or more. Because every primary teacher was expected to participate in the project, there was a wide range of prior experience with computers. Some teachers had been using computers for 15 years, but others had little or no experience. All teachers received extensive inservice education on SuccessMaker as well as the nature of a networked system; however, most of the sessions focused on topics such as how to manage the system, record generation, and troubleshooting problems. Few, if any, sessions dealt with issues such as how to make the ILS a natural component of the existing curricula.

Once the term began, the researchers observed large differences in the ways computers were used. Inexperienced teachers tended to set up usage schedules, and initially student rotations were established. Some of the inexperienced teachers maintained these schedules throughout the year, but others, especially those who encountered technical problems, became disillusioned with the ILS, and their use of the package waned. They often had to stop small or whole class activities to deal with a hardware or software problem, and although many attempted to cope with these challenges the disruptive effect had an impact on frequency of use. A second trait of neophyte users was to 'set it and forget it'. The publishers of SuccessMaker stress how the package can free teachers to engage students in other types of activities while those working with the ILS are learning from the computer. Some teachers accepted this notion without question, and the result was little or no interaction with students while they engaged in computer-based learning. This observation was especially interesting because it was different from their normal behavior where interactions with students were frequent. For example, when students engaged in seatwork, these teachers would move from child to child, asking questions, clarifying problems, reteaching when necessary, and offering encouragement. An explanation for this behavior was given by one teacher who said, "The computer program is looking after their needs, and, besides, I get a printout of their performance."

A final trait of neophyte computer users was a tendency to revert to 'old favorites', that is, programs that were used previously. As mentioned in the above paragraph many teachers simply reduced their use of SuccerssMaker, without substituting any computer-based learning. However, a subgroup, also composed of teachers who reduced their use of the ILS, returned to 'old favorites', a term one Grade 2 teacher used to describe her collection of CD-ROMs. Many of these CD-ROMs had been purchased through a special program instituted in previous years by the school board, and each teacher was given a grant to buy whatever software he or she desired. Thus, unlike the selection of the ILS, which was carried out at the school board level, the teachers had a voice in the selection process. Learning how to use these programs had occurred during a two year period so that even so-called neophytes had some experience with them, and interviews with teachers and observations of their classroom use of CD-ROM program indicated satisfaction. Unlike the networked SuccessMaker package, which was complex and offered numerous technical challenges, the CD-ROMs were simple to use, and the teachers saw their place in the curricula.

More experienced computer users tended to behave like the neophytes, at least initially. They set up rotation schedules, and during the first few weeks of the term it was difficult to see major differences in the two groups. However, once technical problems appeared, a key difference emerged. Like the teacher in the Burnett et al. [1989] study the experienced users tackled the challenges independently. Moreover, if the problem could not be solved, this group knew where to obtain assistance, and they would tap into chat groups, email the software publisher, or call the technical support staff at the board office. In a conversation with one of the experienced teachers, Roberta Baker, the researchers even learned about a 'hot line' established by the board to deal with just such problems. Interestingly, it seemed that only a select group of teachers knew about this hot line, the experienced users. Concomitant with expertise about how to solve problems and acquire help, this group demonstrated another characteristic that distinguished them--a willingness to pay the price. What we mean by this phrase is that experienced users seemed to understand that learning about computers took time, and they saw this investment of time and effort as a natural consequence of being a master of information technology. Computer neophytes, many of who were excellent teachers, tended to give up whenever they perceived a dead-end or a conundrum that could not be easily solved.

As with the neophytes, experienced users modified their computer schedules over the year, but the differences in the types of changes and the reasons for them were distinct. Consider the case of Roberta Baker, a Grade 2/3 teacher who had used computers for approximately 15 years. There were six computers in her room, three networked PCs, a non-networked older PC, and two Apple IIes. If needed, she would sometimes bring in her PC notebook, which could be tied to the network. Roberta's use of SuccessMaker waned as the fall term progressed, but her reasons were well thought out, and they were derived from her daily interactions with children as they worked at the computers. Roberta worked alongside children as they engaged in computer-based learning, much as she did during traditional learning activities; thus, she understood the strengths and weakness of the ILS. She discovered that the math component of the ILS fit well with the curriculum, but she scoffed at the idea it carried out instruction. "I see it as a practice component," she said. Her critique of the language arts strand of SuccessMaker was stronger. "The program focuses on too many low level skills. My program is richer," she asserted. Thus, Roberta relegated SuccessMaker to its proper place in the classroom, at least from her perspective. However, computers continued to play a major role in fostering learning in the Grade 2/3; it just assumed a different role. Children engaged more in using a new multimedia composing program for writing, and they were taught how to use email to communicate with friends or students in other schools. Her children became keypals with students in another local school, where the teacher also was an experienced computer user.

Roberta's actions were similar to those of other experienced computer users. Their use of the mandated ILS varied even though some teachers used it extensively. The computer use patterns of some experienced users seemed to mirror those of neophytes, but clear differences emerged. The experienced users, because they often worked alongside children as they engaged in computer-based learning, modified scheduling routines as well as the types of programs used to meet curricular objectives or the individual learning needs of children. Even teachers who chose to make SuccessMaker the main component of children's computer-based learning did so based on their opinion that it was supplementing curricular goals. In other words, all the experienced teachers were making decisions based on several factors including a thorough knowledge of their curricula as well as those embedded in various computer programs and day-today observations of children as they used information technology. However, the paths they took varied depending on their professional judgement.

It was not surprising to discover that experienced computer users found creative ways of employing technology, but the researchers did not anticipate another aspect of practice. The group was more judicious than neophytes in selecting when students would not work on computers. This statement may seem strange, but some neophytes, with their 'set it and forget it' tendencies, were more prone to leave students working on the computers even though another activity appeared to call for group participation. Here are two examples. In one classroom, the Grade 3 teacher read aloud to the children each morning and immediately after lunchtime, an enriching activity that was greatly enjoyed by the students. However, even though most of the students gathered around the teacher on the rug to listen to the story, two were assigned to SuccessMaker. Often these students could be seen pushing their headsets back so they could enjoy the book. On another occasion, a Grade 2 teacher brought in a guest from Africa, and the children gathered around to listen to an African folk tale and to learn about her country. Again, although most of the students participated in the group activity, two students were assigned to the computer. On the other hand, experienced teachers tended not to assign students to computers if they believed the activity needed complete class interaction. It was common for Roberta Baker, the teacher described earlier, to declare the computers off-limits, and these times included read alouds, class discussions, special projects, and whenever guests visited.

SUMMARY AND CONCLUSIONS

In this paper we used the call by Jones and Paolucci [1998] for more formal quantitative studies of information technology as a starting point for our discussions. Although we criticized aspects of their position, it does not represent a straw man. They offer a serious challenge to advocates of information technology, and these authors are correct in pointing out that huge amounts of money are spent on both hardware and software, with little quantitative evidence to support its value as a delivery medium. Our concern lies with their narrow interpretation of how the value of information technology should be judged. We do not accept the notion that computer-based learning is simply a delivery mode, and that its value or lack of value can be measured by comparing it with traditional educational delivery modes. The world wide web can be used to present entire courses, and especially at the tertiary level of education this value often is exploited, but the internet also can be used as a research tool, a publication vehicle, a venue for sharing information, and a personal or group communication conduit. We described several possible areas where case studies offer unique insights into the potential of new information technology as well as how teachers are using it in the real world of schools.

Are there practical lessons to be learned from case studies of teachers and children using information technology? This question is important because case studies, unlike quantitative investigations, are not generalizable. We answer this question affirmatively, and in the final section of this paper offer a sample of possibilities. One of the values of case studies is to make educators aware of issues. Miller and Olson [1998] made this point as follows: "We believe that the lessons learned by observing the interaction among teachers, children, and technology in the classroom culture may offer signposts to other educators, but unlike large scale projects, where evaluations frequently lead to implementation guidelines that may be considered models for others to follow, these intensive cases are best seen as highlighting the complex issues involved in using computers to enhance learning, issues that may have to be addressed by educators in unique ways because each educational setting is different. Thus, the lessons learned from closely observed classrooms are best characterized as consciousness-raising" (p. 357).

Consider the case of multimedia composing, a tool that permits students to access all the normal features of word processors but also allows the inclusion of movies and photographs to supplement text, animation of characters, the addition of voice or music, and the potential to publish the final product on the internet. Teachers who wish to use such tools are faced with a dilemma concerning how to introduce the features embedded in these programs. Should teachers usurp valuable amounts of class time to introduce all aspects of multimedia composing or should they permit students to explore independently? Case studies on this type of composing [e.g., Labbo, 1996] demonstrate that students indeed learn from each other and that when interesting features are discovered, the news spreads among students. In one way, Labbo's observations are similar to those of Blackstock and Miller [1989/90], who found that the 'computer subculture' was a powerful stimulant in fostering learning about computer and software. A Grade 2/3 teacher, who attended workshops on multimedia composing, decided to take advantage of such insights by introducing her students only to fundamental features of a particular program, The Castle, which was integrated into a unit on Medieval Times [Miller, 1998]. The teacher's observations were similar to those reported in Labbo's and Blackstock's and Miller's studies, that is, children were able to discover software features once they had a rudimentary understanding of key options. Equally important, these children took pleasure in sharing this knowledge with peers. Using her understanding of how students acquired procedural knowledge about computer programs, the teacher saved valuable class time.

Because of the pace of technological change, educational software often is put on the market with little field testing. Although teachers may be consulted about the software, it tends not to evolve as textbooks or curricular materials did in the past. An exception to this observation is the case of The Oregon Trail, one of the first simulations produced by the Minnesota Educational Computer Consortium, which continues to be refined. Case reports by Watson [1987] and Burnett and Miller [1987] put into practice the principal that software should be designed with teachers and not for teachers. In the latter study, the researchers discovered the value of different iterations of the software, which were informed by observations of teachers using the program. As with Burnett and Miller, Watson developed her geography software by making teachers part of the creation team. Two noteworthy values emerged from this project. First, because teachers were part of the development team as well as the professionals who tried out the programs, there was a strong link between the curriculum and the software. Second, the software was modified and improved over time, with the result that the programs were both sophisticated in a technical sense and attuned to students' learning needs.

In conclusion, we return to our original premise, that case studies have the potential to offer unique insights in helping educators understand the place of computer technology in classrooms. We recognize that the complete picture of how to make technology an integral component of teaching and learning will be derived from the application of many different methodologies, and it should be the nature of the questions rather than a bias toward a specific evaluation or measurement approach that should guide studies. Within this mix, case studies, as demonstrated in this paper, can play an important role.

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CHAPTER FOUR

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CLASSROOM MODELS:
CASE METHODS IN ENVIRONMENTAL IMPACT

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ABSTRACT

Higher Institutes of Technology need to include the principles of environmental law in their curriculums and teaching plans.

Teaching models for professional and didactic games provide an active teaching method, which allows students to learn through role playing and emphasizes problem solving in the management of real situations. In this paper, the term "Imitative Professional Models" is used to describe the case method.

This paper strives to demonstrate a model for professional games that takes an actual environmental situation, scales it down to a manageable example, and aims to develop problem solving skills in the student. The games, applicable to teaching both engineering and architecture, contain a knowledge base founded on the fundamental precepts embodied in Cuba's national environmental law.

INTRODUCTION

Higher Institutes of Learning have an inescapable duty to teach the principles of environmental law to future project managers and planners as an important tool to protect the environment.

To understand the concept of environmental vulnerability and its application during the project stage can help to significantly reduce environmental damage and enhance the efficiency of evaluating environmental impact.

From a pedagogic point of view, the student who employs interactive methods to accumulate knowledge – basically creating her/his own experiments and conclusions – begins with finding solutions for their specific model and ends with learning a problem-solving approach which may later be applied in their future professional lives.

The model demonstrations discussed in this paper, with their simplified presentations, allows future planners and project managers to better understand their role in the process of environmental evaluation -- as much in finding the most sustainable options as in understanding the type of information required of them in the studies of environmental impact.

The didactic game helps the student to better memorize and comprehend the basic concepts included in the laws. With these principles in mind, the objectives of this paper are:

- To design and solve an Imitative Professional Model (IPM) for use in practices of environmental impact.
- To design an educational game that helps students memorize the basic concepts embodied in environmental laws.

CURRENT SCHOOL OF THOUGHT

When designing Imitative Professional Models to be applied to the study of environmental impact, the instructor should consult two types of bibliography: those linked with pedagogic techniques that allow the design of these models and those linked with environmental strategies to develop studies and evaluation of environmental impact.

PEDAGOGICAL TECHNIQUES FOR THE DESIGNING OF IMITATIVE PROFESSIONAL MODELS (IPM)

Strategically, IPM are based on the application of the Constructivist Model of Learning, as defined by Yager (1992). This learning philosophy is the focus of the Science Technology Society (STS), as defined by the National Association of Science Teachers (1990-1991). Other notable authors have applied this philosophy to specific fields of science: Schwartz (1994) and American Chemical Society (1995). Another approach in favor of this philosophy is provided by Garritz (1994):

> "Although learning happens when the person involved can connect ideas to a construction of personal meaning, the process doesn't always happen in an isolated way. In this way, the classroom becomes a place where students shares their personal criteria and where the professor motivates the learning process by challenging their concepts."

Although the constructivist model offers a strategy for IPM, the tactic embodied in this work is based on "Active Learning Methods" - and demonstrated by the professional games.

According to Verrier (1988):

> "The methods that require creative activity, individual analysis and conclusions along with the comparison of different aspects of independent formulations should be considered productive methods (some authors define them as *active methods*)...
>
> The professional game, a concrete method of higher education, is a game of imitation for the future professional and can be defined as a symbolic model of professional activities.

Expressed Verbitskii (1982):

> Utilizing the occupational (professional) game and other forms of active teaching methods (analysis of concrete situations at future production centers, role playing, etc) can ensure the formation of the specialist's theoretical and practical thought, the indispensable qualities that the individual should gather to carry out their professional responsibilities, abilities to guide production and to take individual and collective decisions...
>
> Occupational games are usually interpreted as *branches of Imitative Modeling*, where attention is fundamentally paid to the content of the subjects by means of models.

Cuba has had positive experiences applying Imitative Professional Models, as developed by the author. These models improved learning in Cuban engineering schools during 1997 and geophysics engineering during 1998.

ENVIRONMENTAL STRATEGIES FOR THE STUDY AND EVALUATION OF ENVIRONMENTAL IMPACT

Leaving aside the legal character of the concept of Environmental Impact, it is necessary to analyze related bibliography:

Cuba's Environmental Protection Law is a viable document for the continuous study and evaluation of environmental impact in Cuba.

For an analysis of the current school of thought on the issue, one should review environmental laws in other countries as a basis of comparison. In addition, this could spark new ideas not currently covered by Cuban law and could be employed in designing additional IPM. The author studied laws published by the government of Spain (1988) and those published by the country's Valencia Province (1990).

When designing an IPM as part of the curriculum in Environmental Impact, you need to consult related bibliography that defines cause-and-effect relationships and impact evaluation. This consultation should include Coles de Negret (1987), Cadelco (1993) and Environmental Impact Course (1997) from the University of Alicante, Spain.

Studies and evaluations of environmental impact should include other specialized bibliographical sources dealing with environmental factors -- earth (Auernheimer, 1997), water (several authors, 1997), and air (several authors, 1997). Other Authors (1997) analyze "The Characteristics and Treatment of Residuals."

These four subject areas comprised the main bibliography of different Graduate Study courses about Environmental Protection Law.

The design of IPM needs a bibliography where present Cuban applications are linked with the discipline Environmental Impact: Alvarez (1996) and Ponce (1997).

METHODOLOGY

In accordance with the stated objectives, this work focuses on two objectives:

1. explaining how to design Imitative Professional Models (IPM) and their problem solving process, using an environmental impact case; and
2. the design of educational games that stress learning the basic concepts of environmental impact.

Next, the following methodology is explained in order to achieve one of the results.

HOW TO DESIGN IMITATIVE PROFESSIONAL MODELS (IPM) AND THEIR PROBLEM SOLVING PROCESS, USING AN ENVIRONMENTAL IMPACT CASE.

The design of the proposed case method consists of the following steps:

a. Selecting the information to study – in this case, the content of the report: "Evaluation and Prediction of Environmental Impacts in Mining," (Ponce, N. et al; 1997).
b. Adapting the basic information – again, the specific case was changed to read as a proposed project and not as and already-existing impacted area (the author chose the Castellanos mines in Cuba). As such, existent environmental impact was posed as a possibility and not an actuality.
c. Writing up the case from the perspective of the project manager as mandated by the laws of Spain (1985).

This approach is considered quite useful for the Cuban student since this country's environmental law does not require the same of project managers -- even though this author considers such responsibility fundamental in the study of Environmental Impact.

Step C actually provides the student with the data needed for problem-solving: in other words, the heart of the IPM. Problem solving is carried out in stages, consisting of the following:

Stage One

a. Individual and collective study and analysis of the text of the IPM.
b. Determination by the students of those that constitute technical lagoons or deficiencies of knowledge in the information facilitated by the project chief in their opinion. These technical lagoons of the information surrender to the professor individually for their revision.

Stage Two

c. The student selects the most critical and important activities that will produce the greatest impact on the project, and the components of the environment which will be most affected.

The student should compare her/his findings with similar case studies taken from the literature. In this case, it would be useful to compare Leopold's method used in "Phosphate Mines in U.S.," as a comparable case in open pit mine exploitation and the "Environmental Impacts of Mining Extraction" found in the Alicante University's Course on Environmental Impact, 1997.

This process allows the student to identify successive steps in terms of the magnitude and importance of their impact for later evaluation.

The student then designs a chart plotting the data which identifies the project's most important activities and the environmental components they affect.

According to Jimenez (1997):

> The simple fact of knowing the rows (project activities) and columns (environmental factors) allows the student to plot his data on a grid. The rows denote the importance of the activity which may potentially alter the environment while the columns denote the possible degree of alteration in the corresponding environmental factor.

d. Classifying impact according to norms contained in "Content of the Studies of Environmental Impact," as appears in Spanish law:

> The process will distinguish positive from negative, temporary from permanent, simple from accumulative or synergetic, direct from indirect, reversible from irreversible, recoverable from non-recoverable, and regular from irregular effects...
>
> The consequences of environmental impact which is compatible, moderate, severe or critical will be seen as a consequence of carrying out the project.

Stage Three

e. Identification of principal impact (severe and critical).
f. Proposal of corrective measures and a vigilance program.
g. Writing a report that contains items b through f.

At the end of Stage One and Stage Two, the professor and students should collectively analyze and review the progress of the work. At the end of Stage Three, the students should collectively be prepared to defend their thesis.

SUMMARY OF THE RESULTS

PROJECT ACTIVITIES AND AFFECTED ENVIRONMENTAL COMPONENTS

Work and Activities of the Project (grid rows):

I. Mining extraction
II. Minerals Processing
III. Solid waste
IV. Liquid residuals
V. Accidental waste
VI. Road Construction

Components of the environment (grid columns):

A. Water Quality
B. Air Quality
C. Terrain
D. Deposits and Sedimentation
E. Vegetation
F. Wild animals
G. Socioeconomic Conditions
H. Landscape and Panorama
I. Soil

MATRIX

	A	B	C	D	E	F	G	H	I
I	1	5	8	10	16	19	22	25	28
II	2	6		11			23		
III				12	17	20		26	29
IV	3			13					
V	4			14					
VI		7	9	15	18	21	24	27	30

The parts of environment affected by the largest number of the project's actions are :

- Deposits and Sedimentation
- Water Quality
- Vegetation
- Landscapes and Panorama
- Soil.

The project's actions that affect the greatest number of environmental components are:

- Mining Extraction
- Solid residuals from mining
- Infrastructure Construction .

One important side-effect from increased environmental protection is the creation of new employment.

REGISTERED IMPACTS IN THE GRID

Negative impact on Water Quality:

- Mining
- Mineral Processing
- Liquid Residuals
- Accidental Waste

Negative impact on Air Quality:

- Mining
- Mineral Processing
- Infrastructure Construction

Negative impact on Terrain:

- Mining
- Infrastructure Construction

Negative impact on Deposits and Sedimentation :

- Mining

- Mineral Processing
- Solid Waste
- Liquid Waste
- Accidental Waste
- Infrastructure Construction

Negative impact on Vegetation:

- Mining
- Solid Waste
- Infrastructure Construction

Negative impact on Wild Animals:

- Mining
- Solid Waste
- Infrastructure Construction

Positive Socio-Economic Impact -- Employment:

- Mining
- Mineral Processing
- Infrastructure Construction

Negative impacts on Landscapes and Panorama:

- Mining
- Solid Waste
- Infrastructure Construction

Negative impacts on Soil:

- Mining
- Solids Waste
- Infrastructure Construction

CORRECTIVE MEASURES

1. To guarantee the impermeability of the vats to prevent cyanide leaching into the sub-soil. (Impact 2).
2. To guarantee adequate supplies of hydrogen peroxide in order to treat cyanide liquid residuals.
3. To maintain a system of chemical-environmental surveillance (Impact 3).
4. In order to avoid accidental waste, two places should be reserved to deposit excess cyanide liquid (Impact. 4).
5. To provide face masks for all workers in mining and processing.
6. To provide protective gear for excessive noise in mining and processing.
7. Air filters should be used to reduce the amount of dust in the atmosphere (Impacts 5 & 6).
8. A detailed rehabilitation plan for the mine site needs to be in place at the end of the mine's exploitation (Impacts 8, 16, 17, 25 and 26).
9. A plan should exist to restore the vegetation at the mine site. (Impact 28).

INSTRUCTIONS OF THE DIDACTIC GAME

EDUCATIONAL OBJECTIVE

To familiarize the student with the Basic Concepts of Environmental Impact.

Components of the Game

1. Set of Learning Cards (A) – with basic concepts of Cuba's Environmental Law.
2. Set of Learning Cards (B) – with simplified definitions of the basic concepts.
3. On the flip side of (A), the cards are identified with the words "BASIC CONCEPTS" and (B) with "SIGNIFICANCE."

Number of Players

Up to four players.

Rules of the Game

1. Both packs of cards are shuffled randomly, divided into two and placed face down.
2. Randomly chose your first player and then move clockwise.
3. Each player picks 5 cards from (A) and five from (B) and tries to match a concept with its corresponding meaning, maintaining a closed hand.
4. The first player then starts to pick from either pack (A) or (B). If the player decides to keep a card, one from her/his hand must be discarded.
5. When a pair is matched, the cards should be turned face-up.
6. The game is over when one of the players has matched all the cards in his hand or the professor decides time is up.
7. Undeclared matches cannot be scored.

Winners

The winner is the player with the largest number of pairs. A tie can exist.

CONCLUSIONS

1. Imitative Professional Models (IPM]) has been created for use in Cuban courses on Environmental Impact. This IPM is recommended for use in under-graduate courses of geological sciences. However, the method can be adapted for use in other courses.
2. The educational game is an effective classroom tool to enhance memorization of basic concepts.

RECOMMENDATIONS

These methods can be effectively employed in undergraduate engineering studies.

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GETTING TO KNOW NEW FIRST-YEAR STUDENTS THROUGH CASE STUDY RESEARCH AND WRITING

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Abstract

Graduate students who co-taught a freshman seminar course were asked to research and write a case study about a first-year student in the class. The case study was to describe a problem the student had faced or a decision the student had made early in his or her first semester in college. The purpose of this activity was twofold, first it allowed the graduate student co-teachers to get to know at least one of their students very well and, second, it provided a means of collecting case studies specifically about first-year students as they adjusted to the college campus. Of the case studies collected, most dealt with problems new students encountered with relationships; relationships with family and friends left behind, and relationships with new friends, roommates and faculty on campus. A example of a case study developed through this process is presented along with its instructor note.

GETTING TO KNOW NEW STUDENTS

Getting to know your students is a first and most important task for the effective college instructor, equally as important as knowing your subject matter and knowing yourself [Palmer, 1997]. Teaching excellence requires getting to know your students [Findley, 1995], so graduate students participating in a practicum course that included co-teaching a freshman seminar course, University 101, at the University of South Carolina, were encouraged to begin learning about their students by getting to know at least one student in their class very well. This was accomplished by requiring them to write a case study about a problem or decision that one of their students faced in the first few weeks of college. Gathering the data for the case study brought the graduate students into close contact with at least one student whose family, social and educational background they learned in some detail and depth. This gave them some sense of what it means to get to know your students.

THE FRESHMAN SEMINAR COURSE

The University 101 program was instituted at the University of South Carolina in 1972 and has become internationally known and widely replicated for the effectiveness of its approach to new college students [Gardner, 1986]. At the heart of the program is University 101, a 3-semester hour, credit bearing, graded course offered as an elective to most freshmen. Currently, over 50% of freshmen enroll in the course. Since its inception, more than 40,000 freshmen have enrolled. The course has been shown to have a positive affect on the retention and graduation rates of enrolled students [Fidler, 1997].

GRADUATE STUDENT LEADERS

The graduate student leaders were students in their second and final year of a master's degree program in student personnel services or higher education administration. They were each seeking to gain practical experience working with a University 101 instructor; to gain formal instructor training by University 101 personnel; to be affiliated with this renowned program; to gain useful experience and enhance their career opportunities after graduation; and apply the student development and learning theory that they had acquired in their studies. They were selected for their interest in helping undergraduate students become successful at the university, their sensitivity to and interest in issues of diversity, their enthusiasm for the university and its academic and co-curricular life, and their willingness to model appropriate behaviors, like goal-setting and time management, for new students. The duties of the graduate student leaders included attendance at all of their University 101 class meetings, planning the course content and syllabus, assisting with arranging visitors, speakers, field trips, etc., facilitating class discussions, serving as a mentor for class members, providing student feedback to the instructor, and conducting class sessions as requested by the instructor.

CASE RESEARCH AND WRITING PROCESS

Each graduate student leader is asked to carefully observe one freshman student in the University 101 class and to write a case study about that student. The case study is to be a detailed account of an incident, problem or decision that the freshman was involved in during the first few weeks in college. The initial draft of the case study is brought to a meeting of the practicum class to begin the five step process to completion.

Step One

The case writer's initial draft is distributed to and read by the Graduate student leaders in the practicum class. The draft may be anywhere from one paragraph to one page in length and can be read by participating graduate student leaders prior to a discussion of the draft in the work session.

Step Two

The case writer tells the group the story behind the case. The participants hear about the case situation in the writer's own words and have the opportunity to ask clarifying questions. The discussion is tape recorded as a way to collect additional data about the case, including quotes, descriptions of physical locations, persons, and communication patterns, as well as analytical data from the participants' interactions.

Step Three

A working draft of the case study is prepared by adding the introductory "hook", title, and presenting problem. Details, quotes, and descriptions that were gathered in step two are woven into the working draft at this point.

Step Four

The working draft is distributed to the participants to be read and, again, discussed. This time, the discussion is focused on how the case study would be used in the classroom. From this discussion, the issues embedded in the case as well as questions used to initiate discussion are noted. This information will later be used to prepare the instructor notes.

Step Five

Inaccuracies, errors of fact, or additional details that emerge in the discussion are used to prepare the final draft. This draft is then taken by the case writer to the freshman student about whom the case study was written to be read and verified for accuracy. The student is then asked to sign a release form giving permission for the case to be used to initiate class discussions and for publication.

AN EXAMPLE OF THE CASE WRITING PROCESS

The following is an actual example of the five-step process at work. In the first step a graduate leader prepared a written description of a problem that one of her students encountered during the first few weeks of the freshman year. In this example, Tammy Ott, who is now the Coordinator of the Peer Mentoring Program at Coastal Carolina University in South Carolina, provided a one-paragraph typewritten description of a situation if which she was aware [Exhibit 1].

EXHIBIT 1

Case Study

After much deliberation. Abby finally decided to run for President of her residence hall. Unfortunately, it was midnight and the required forms were due the next morning. At this point she could still drive to the office to pick up the forms. However, Abby was very hesitant to walk from her room to her parking garage at such a late hour. She sat thinking about all the warnings and lectures she had received from her parents and school officials in the last few weeks about safety. She knew that walking alone on campus in the dark was not safe. She could still hear father saying, "Abby, you must be very careful on such a large campus. Your safety is in your hands now. Don't take any chances." She thought her roommate or her friend Brian might be willing to walk with her and she did have mace on her key chain, wouldn't that be enough? As she sat remembering all of the warnings and wanting the opportunity to run for a position on her hall, Abby could not decide what to do....

In this instance, a group of seven graduate leaders had gathered to participate in the case-writing exercise. Ms. Ott's description, with names disguised, was copied and distributed to each participant to read and discuss.

In the second step, graduate leaders discussed the situation asking Ms Ott questions about the student, her background, her roommate, her family and other detailed information that would help them understand more fully the issues involved in the case and what might be done to resolve them. The discussion lasted for about an hour and a half and was tape recorded in order to capture the additional data that emerged naturally in the course of the discussion. This data would be used later to write a more detailed second draft of the case study. The discussion actually turned out to be a powerful learning experience for all of the participating graduate leaders. They were able to focus on a student problem experienced by one of their colleagues and help clarify the issues and suggest alternative solutions to help resolve them. Questions raised in the course of the discussion for Ms. Ott did not have answers were noted and she used them to gather further information from her freshman informant.

During the week following the discussion, with notes and tape recording in hand, a draft of the case study was prepared. In this third step, the case study was expanded to include the additional details that had emerged in the discussion and well as the "hook" to introduce the case and a clear statement of the "presenting problem" as a conclusion to the case. This work was completed in preparation for the next meeting of the group one week later.

The discussion held during this next meeting constituted the fourth step in the process and gave Ms. Ott a chance to correct errors of fact in the draft as well provide additional information that she had gathered from the subject of the case. The discussion turned to how this case could be used in the classroom and participants provided their suggestions for teaching objectives and approaches that might be effective in conducting a discussion of this case. This allowed for the final version of the case study to be prepared (see Exhibit 2).

EXHIBIT 2

FRESHMAN CASE STUDIES

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The Midnight Errand

(This case study was prepared in cooperation with Tammy Ott, Director of Academic Services at Coastal Carolina University, Conway, South Carolina. It is intended solely to initiate class discussion. All names and some peripheral facts have been disguised).

Abigail Vincent had been thinking all evening about running for president of her residence hall government. It was now about midnight and she decided she had done enough thinking. If she was going to run, it was time to do something about it.

Abby, as everyone called her, just turned 18 during the summer and was now a new freshman in her second week at Southern University. It had been a disappointing week. She had gone through sorority rush but did not get a bid from the sorority she wanted most. That was the last thing she expected. Rejection was not something with which she had much experience. In high school she had been one of the most popular students. Attractive and full of life, she had been selected as a cheerleader and invited to join Debs, an exclusive college-like sorority. She had lots of friends and lots of fun.

Abby's decision to run for president was a last minute decision. The campaign started tomorrow and she wanted to get her posters up first thing in the morning. That was the way Abby always did things; wait until the last possible moment.

She had an excuse. Two years ago she was tested and found to have a problem focusing her attention. "Attention deficit disorder" they called it. It had an effect on her grades in high school and she had just barely gotten into the university. As it was, she had been admitted on probation and would have to get at least a 2.0 grade point average in her freshman courses to keep from being academically dismissed. Medication had helped get the problem under control, but old habits die hard and waiting until the last moment was a habit she had not overcome.

When she told Lynette Womack, her roommate, that she was going to run for president, Lynette wasn't at all surprised. They had been best friends in high school and had decided to go to the same university so they could be roommates. Lynette loved the way Abby always said exactly what was on her mind. No one ever had to guess what she was thinking; she just never had an unspoken thought. Lynette had gotten used to Abby's impulsive way of doing things and her quickly changing moods. So, the sudden excitement about running for president after the disappointment of not getting into the sorority was not surprising.

Abby got right to work designing campaign flyers and posters to put on bulletin boards throughout the residence hall. Lynette made a suggestion or two, but her energy level was no match for Abby's and she thought she had better go to bed and get some rest.

In what seemed like a matter of minutes, Abby finished her designs and began thinking about what to do next. She needed to get bright flourescent-colored paper for her flyers and poster board with colored markers for her posters. She wanted to make enough posters for each floor of the three-storied residence hall and enough copies of her flyer that it could be slipped under the door of each resident.

The campus bookstore was closed at this hour, but the university was located in the downtown area and she remembered seeing several drug stores close by campus as she drove around the neighborhood on her several "runs" to the grocery store. One of the Revco stores had a red neon sigh in the window that said, "Open 24 hours." She couldn't remember exactly where it was, but she knew it was fairly close and she could find it if she had to.

The parking garage where Abby parked her car was about four blocks from her room. It was one of those creepy places; a typical concrete structure where footsteps echoed in what always seemed like semi-darkness even in the middle of the day. The university used to have a security guard posted at the garage to prevent vandalism and help students feel safe. But, budget cuts had reduced the security force and the garage was one place where guards were no longer stationed.

The warnings she had heard from school officials and residence hall staff about safety on campus popped into her head and she could hear her father saying, "Be careful. That's a large campus down there and nobody's going to be there to watch out for you. It's all in your hands. Don't take chances." She felt for her keys and the mace that was attached to the chain. "Should I?" she thought.

Again, the discussion was recorded and the information used to further revise the draft and to prepare instructor notes.

The fifth, and final, step in the process was preparing the final version of the case study, obtaining the signature of the student about whom the case was written to authorize its release, and preparing the instructor notes. The instructor notes reflect the discussions about the case by the graduate leaders which served as a preliminary field test of the case. Subsequent experiences using the case in University 101 classes also helped to further refine the instructor notes. Exhibit 3 is a current draft of the instructor notes.

EXHIBIT 3

MIDNIGHT ERRAND

Instructor's Note

Main Topic:	Personal Safety on Campus
Additional Discussion Areas:	Gender and Safety; Time Management; Roommate Relations; and Getting Involved.

Overview - This case depicts the situation of a new freshman trying to get involved in campus life early in her first semester. When she does not receive a bid from the sorority she rushed, she decides to run for president of her residence hall. It is midnight on the eve of the first day of campaigning and she wants to get started on her campaign posters. She remembers the "open 24 hours" sign on a Revco store near campus and thinks about going there to get materials to make campaign posters. Her car is parked several blocks away in a campus parking garage that is not well lighted. She recalls the warnings of her father and university staff members about campus safety as she wonders what to do.

Discussion - This is a short case study that could be used early in the semester to raise students' awareness of safety issues on campus. Further, it is a good case study for introducing students to the case method of instruction. To ensure the active involvement of students in the discussion, they might be given about five minutes to read the case and write what they would do if they were Abby. You want the students to "get into" the case; to immerse themselves in the situation described. So, they should be asked to imagine that they are Abby faced with the same decision she found herself facing. When they have completed writing, they should be divided into small groups of three, but not more than five, students to share their solutions. These small group discussions should be very short, lasting only about five minutes. Now, you are ready for the whole class to discuss the case.

To start, ask one of the students to summarize the case in their own words. Then begin gathering all the facts that the class might think relevant to the case:

- What do we know about Abby?

  Answers will probably include such facts as she is a new freshman, she is 18 years old, attractive, was popular in high school, has trouble focusing her attention, was admitted to the university on probation, says what is on her mind, is impulsive, has a car, did not get into the sorority she wanted, and wants to run for president of her residence hall..
- What do we know about Southern University?

  There are very few facts about the university contained in the case study. However, students will probably note that it is located in a downtown area, it is large, has a parking garage for students' cars, and has reduced its security force because of budget cuts.

- What are the main problems described in this case?
  Some students, usually males, will say that there is no big problem; if Abby wants to go to the store, she should just go. Others will note that there is a concern about safety on campus and Abby has been warned about it. Abby's attention problems and her academic status may also come up because astute students may see her "real" problem as keeping up with her studies.
- If Abby were male would she have this same problem?
  This question allows students to explore the different circumstances that students find on a campus based upon their gender. Is the campus the same for men as for women? Perhaps the discussion could progress to a deeper level at this point. Students might now realize that the main problem is more than just Abby's problem; safety is a problem that affects everyone on campus.
- What are some solutions that could be proposed?
  Students are now ready to brainstorm possible solutions. Perhaps they could be encouraged to suggest solutions that Abby could follow, and then talk about solutions that the university might use.
- Given the circumstances, what is the best solution?
  There is no right solution to a case study. There are better solutions and worse solutions, but no right solution. The students will decide for themselves what they would do if they found themselves in Abby's position. Some students may be frustrated by not being given the "right" answer that they can parrot back on an exam. But, it is important that the instructor not provide an answer that students perceive to be the "right" answer. If this is done, then subsequent case discussions will be seen by students as nothing more than meaningless exercises. Why struggle for a solution if someone already knows what it is?

Analysis - Campus safety is the most obvious concept involved in this case and it can be explored from the viewpoints of men, women, and the university community as a whole. As students discuss whether Abby should run her "midnight errand", they can also be encouraged to find out if there is an on-campus emergency phone number, where the campus security or police office is located, whether there are emergency call boxes on campus and how they operate, what types of safety escort services are available, what kids of bus services, what is the on-campus crime rate, and the number of ways that students can assist one another in terms of personal safety. The case study discussion allows the students to identify with the safety issue in a personal way and leads them to learn about how they can enhance their own safety on campus.

Reading - Students can be encouraged to read "You, the University and Safety" by Danny E. Baker in *Transitions: A Handbook for University 101*.

RESULTS OF THE PROCESS

Graduate leaders in University 101 courses have prepared forty case studies during the past three years. From these cases, it appears that personal relationships are the first great concern of traditional-aged college freshmen [Welsh, 1998]. The case studies show freshmen trying to work out new ways of relating to parents, and family who they have left behind at home; trying to figure out how they will continue their relationships with high-school friends who have scattered to other colleges and jobs; trying to learn how to maintain close relationships with boyfriends or girlfriends who may still be in high school or are attending another college; trying to adjust to living with new roommates and making new friends at college; and trying to find out how to deal with college professors and staff bureaucrats. Negotiating this maze of relationships consumes more of the lives of freshmen in their first days of college than might be realized by college faculty and staff. If freshmen fail in working out their relationships, then they begin looking for and seeing the negative in their college experiences. If they are successful, then a sense of security and confidence develops and students begin to realize that they can make it.

CONCLUSIONS

Reactions from graduate leaders who have participated in case writing as part of their involvement with teaching University 101 have been mixed. More than half (57%) of the students reported a positive experience teaching University 101. But, 21% indicated that they did not have a good experience. The remaining (22%) were neutral about their experience. Suggestions made by the graduate leaders for improving the experience indicated that many thought that writing case studies had no connection to teaching University 101 and they asked that more attention be given to providing teaching tips and more time be devoted to sharing teaching experiences among themselves. The connection between case writing and getting to know new students was not clear to most of the graduate leaders. Perhaps, inexperience with the case method of instruction prevented many of the graduate leaders from actually using case studies in their University 101 classes. If that is so, then it would make sense that the value of writing case studies would not be seen as much more than an academic exercise. For the future, efforts to train graduate leaders in the use of the case method of instruction will be strengthened in order that those leaders can gain a broader perspective on the use of case studies to complement their experience with writing case studies.

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AN INNOVATIVE APPROACH TO THE USE OF CASE STUDIES IN INTRODUCTORY ACCOUNTING EDUCATION

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Abstract

Case studies are used in accounting education both as a teaching tool and as part of a student's assessment. Because of the nature of non-ambiguous accounting processing tasks, the use of case studies in introductory accounting courses presents faculty with validity, ethical and motivation problems related to such assessments not readily encountered in the social sciences. This paper describes a program which generates individual accounting case studies and solutions to minimise the problems previously mentioned. The program was funded through a *Federal Government Quality Enhancement Grant*.

The paper discusses related issues of ethics, equity, motivation and co-operative learning. The effectiveness of the program was evaluated after implementation. Student performance on individual and common accounting case studies was compared. The findings indicated that academic misconduct by students and its related consequences was diminished without significantly increasing administrative or marking costs.

INTRODUCTION

The use of case studies is a common occurrence in accounting education. The type most often encountered would be the "Illustrative" case study as described by Datta [1990] and Yin [1989]. Illustrative Case Studies are descriptive; they utilize one or a number of instances to show what a situation is like. This helps an understanding of similar situations and furthers the learning process. Case studies give students the opportunity to apply their knowledge and connect "what's taught in the classroom and what the real world is like" [Evangelauf 1989, P31]. Case studies of this nature in introductory financial accounting usually describe the activities and transactions of a business enterprise over a period of time, and requires students to analyse these transactions and prepare the financial records.

This work also allows for the assessment of important areas such as accounting and business knowledge, problem-solving skills and critical-thinking abilities [Herring and Izard 1992]. If the case study is suitably designed other important areas identified by Herring and Izard [1992] such as interpersonal skills, ethical behaviour and independence can be incorporated. This exercise constitutes an important part of a student's assessment and helps to ensure that the total collegiate experience has been a valuable one [DeMong et al. 1994].

THE CASE STUDY AS AN ASSESSMENT TASK

Although the use of case studies in accounting education is common, it has a drawbacks for assessment purposes not found in the social sciences. In the social sciences a lecturer can ask students to analyse a case and expect to get a wide range of diverse and unique responses. Plagiarism is usually easy to identify and students and faculty will normally view individual efforts as proprietary when using this type of exercise. Unfortunately in accounting, the nature of non-ambiguous accounting processing tasks will result in the same correct answer for all cases. Furthermore, the layout, calculations and reports will also be similar (if not identical), especially if a software spreadsheet package like Lotus or Excel is used. This makes it impossible to ensure that work handed in has been done by the student in question. It therefore encourages cheating which is seen as a widespread problem by educators and students alike [Connell 1981; Connor 1985; Haines 1986; Maslen 1993] and detracts from the value of case studies as an assessment tool. Easily copied work also discriminate against honest students who will find themselves at a disadvantage regarding grades [Todd-Mancillas 1987]. This not only makes this assessment task dubious both in the eyes of students and faculty but also reduces a student's perception that he or she has produced an individual and consequently unique effort.

Educators have commented on academic misconduct in courses leading to employment fields requiring high levels of competence and personal integrity [Ferrel 1993; Todd-Mancillas 1987]. Accountants play a very important role in ensuring the integrity of our financial system, consequently it is important that ethical behaviour be encouraged in accounting courses by ensuring that opportunities for misconduct are minimised. This has been highlighted by research that has established a likely deficiency in ethical development for those entering and remaining in the accounting profession [Mautz 1975; Blank 1986; Armstrong 1987; Ponemon 1988]. The Bedford Committee [1986] recommended that "accounting education must not only emphasise the needed skills and knowledge, it must also instill the ethical standards and the commitment of a professional."Significantly, Ponemon [1988] concluded that these deficiencies may be the result of characteristics within the accounting curriculum that inhibit an individual's ethical beliefs during their education. The setting of assessment tasks that are easily abused for assessment purposes should be considered in the light of Ponemon's findings.

One of the positive aspects of accounting case studies is that they enable students to learn co-operatively. The value of co-operative learning has been commented upon by numerous researchers. For example, in a review of the educational research literature, McKeachie et al. [1986, P63] conclude that the best answer to the question, "What is the most effective method of teaching?" is "that it depends on the goal, the student, the content, and the teacher". But the next best answer is, "Students teaching other students." Educational practitioners have reported that co-operative learning results in high academic achievement; provides a vehicle for students to learn from one another and enhances academic achievement and social competence [Johnson and Johnson 1989; Kagan 1989; Pemberton 1991]. These positive aspects are particularly relevant for subjects like accounting where co-operative learning can be extremely effective [Cottell and Millis 1993]. Individual accounting case studies will allow for this interaction without necessarily compromising the value of individual output. This fulfils the two key features of co-operative learning as described by Cooper [1990] namely "student-student interdependence and individual accountability." The problem of accountability and the fact that group grades are distasteful to many students has led many faculties to use group work sparingly [Cooper 1990]. Individual case studies have the potential for achieving the benefits of co-operative learning without compromising on individual assessment.

RESEARCH OBJECTIVES

The purpose of this article is to report on an approach designed to alleviate some of the problems that have been discussed above by providing each student with a *unique case study* that has been generated by a computer program. The effectiveness of the computer generated case studies was assessed by monitoring the implementation of the program. This monitoring was both qualitative and quantitative. Although a number of important issues were raised in the previous section of this paper, the research study was confined to investigating the effectiveness of individual case studies as a means of reducing plagiarism, and some of the negative educational and ethical factors related to such conduct. The organisational and cost factors associated with administrating individual case studies were also examined.

An associated aim of the project was show the feasibility of this approach should other institutions wish to develop similar *case study generators*. The database software used in this development was Microsoft

Access. Comparable programs could be developed by accounting educators with advanced knowledge of Access or any similar database software package.

THE CASE STUDY GENERATOR OVERVIEW

The computerised case study generator was developed for introductory accounting and has its own icons, help screens and pull down menus. The individual case studies generated can cover a range of different businesses, depending on the format used. Each case study has a unique set of transaction types, transaction amounts and dates. The program numbers each case study for identification purposes. Students are then required to manually prepare a full set of books for one month, together with balance date adjustments and financial statements. An integral part of the case study is the preparation of a ten column worksheet.

Due to the complexity and length of a major accounting case study, it would be impractical to request tutors to compute a solution manually for each unique case study. This is a major reason why individual cases are seldom used. The case study generator can automatically compute the answers to each individual case study at the same time that the list of transactions is prepared. The solution is in the form of a ten column worksheet. This separate solutions file is saved on disk as a stand alone database program. Tutors can key in the unique case study identification number that they wish to correct. The ten-column worksheet for the selected number can then be either previewed or printed by clicking the appropriate icons.

Since a ten-column worksheet contains all relevant information in summary form, the solution can be printed out on one page. This is an important consideration when large numbers of case studies are being marked. The worksheet solution is forwarded by the tutor to the student with their corrected work to complete the learning process.

The case study generator is a dynamic system capable of handling a large number of business types, transactions, accounts, opening balances and adjustments. The number of case studies and solutions that can be generated is limited only by the computer's configuration. If the program is run on a standard pentium computer and laser printer over five hundred individual case studies and solutions could be generated and printed in approximately 30 minutes.

The computer program generates case studies for three different classes of business, namely a Real Estate Agency, a Gymnasium and a Medical Centre. Each student will get a unique set of transactions irrespective of what business is involved. For example, if a student receives the real estate business case study, they might find that the firm has its own offices and furniture whereas another student doing real estate transactions may discover that their business leases furniture and rents premises. Together with this, transaction amounts, the number of transaction types and the dates for the transactions are all different for each case study.

THE RESEARCH APPROACH

The effectiveness of the computerised case study generator and the associated case studies as unique assessment tasks was researched by monitoring the implementation of the program. This monitoring was both qualitative and quantitative, and involved:

- Comparison of student grades on common and individual case studies.
- Interviewing tutors and lecturers to evaluate the marking, administration and educational value of using individual case studies.

Students studying introductory accounting were required to undertake two case studies as part of their assessment. The first case study was a *common case study* and all students received the same exercise. The second case study covered the same basic areas at a similar level of difficulty, in that students were asked to prepare a full set of books for a small business. However each student received a *unique* transaction sheet produced by the computerised case study generator. To help ensure that the transactions used in the two case studies had a comparable level of difficulty, both variates of case studies used similar transaction types, and similar balance day adjustments (albeit in different business settings). There were 115 students enrolled in this course who completed both case studies. The common and unique case studies were both marked by the same group of academics.

The null hypothesis was "There will be no difference between the scores on the common case study and the scores on the computer-generated case studies".

To test the null hypothesis a comparison was made of means and standard deviations on marks obtained by students on the two case study types using a paired samples t-test. The significance level for rejection of the null hypotheses was set at $p < .001$.

There were six tutors and lecturers who participated in this project. Because of the small number of subjects (academics) involved, the results of this survey can only be seen as tentative. For the same reason no statistical analysis of responses by these subjects was attempted.

The following questions were asked as a *pilot study* on the effectiveness of individual case studies. Subjects were also encouraged to give reasons for their responses.

- Comment on the marking and administration of individual case studies using the computerised solutions module, was it any more or less time consuming than common case studies?
- Give your impression on the administrative and control procedures implemented with individual case studies, Did you find them satisfactory?
- What impression did you gain on student attitudes towards individual case studies in the area of assessment validity, motivation and co-operative learning.
- What is your opinion on individual case studies as a valid measure of student knowledge?

QUANTATIVE RESULTS

Students' results on their common and individual case studies were compared using a paired sample t-test (Table 1). The mean score for the common case study was 9 out of a possible 10 marks. Individual case studies on the other hand had a mean score 15.8 out of a possible 20 marks. A significant difference between the scores was found as reflected by the t-value of 29, df 114, with $p < .001$. The null hypothesis was therefore rejected.

TABLE 1
PAIRED SAMPLES T-TESTS FOR COMMON AND INDIVIDUAL CASE STUDIES

Variable	No of Pairs	Corr	2 Tailed Sig	Mean	SD	SE of Mean
Common	115	.43	.000	9.06	.976	.091
Individual				15.87	2.71	.253

Paired Differences

Mean	SD	SE of Mean	T-Value	DF	2 Tail Sig
-6.82	2.46	.22	-29.73	114	.000

QUALITATIVE RESULTS

Academic staff involved in the project were interviewed and responses elicited to the four questions mentioned previously. A summery of these responses is shown below:

1. *Comment on the marking and administration of individual case studies using the computerised solutions module, was it any more time consuming than common case studies?*

It was discovered that the time taken to mark individual case studies using the solutions module was not significantly different to a common accounting case study. The time to extract solutions from the database was approximately five seconds per case study. None of the academics interviewed experienced any increase in time spent on administrative matters.

2. *Give your impression on the administrative and control procedures implemented with individual case studies, Did you find them satisfactory?*

Although tutors were satisfied with control procedures overall, a number of problems were mentioned. These related to the validity of the transaction sheet students were required to attach to their completed case studies. One tutor found that two transaction sheets were identical which implied that one had been photocopied. It was suggested that this could be remedied by printing transaction sheets on special coloured or watermarked paper.

3. *What impression did you gain on student attitudes towards individual case studies in the area of assessment validity, motivation and co-operative learning*

All academics involved in the project felt that individual case studies enhanced the learning process. Although various reasons were given for this opinion, most involved the fact that students were spared the temptation of direct copying. This ensured that the case study fulfilled its task as both a learning and revision exercise. Other comments included increased motivation for students since good grades would be seen as more valid by students and tutors; greater competition and increased interest in an innovative form of assessment. Tutors also noticed that individual case studies did not prevent students from learning co-operatively.

4. *What is your opinion on individual case studies as a valid measure of student knowledge?*

All academics were of the opinion that individual case studies were a more valid measure of a students' accounting knowledge. The fact that marks for the individual case studies were lower and the distribution more spread out was cited as confirmation of this opinion.

DISCUSSION AND CONCLUSION

Bhaskar [1983] described three ways that computers can be integrated into accounting education (1) as a computer science course *per se*, (2) computer-aided instruction where the computer becomes the teacher, and (3) using the computer as a computational tool. This report described how a computer was used as a computational tool for generating unique accounting case studies in an attempt to alleviate the various educational problems associated with common case studies. These problems included assessment, equity, ethics and professional development. Organisational and cost considerations were also investigated.

Although a number of important issues were raised in the introduction, this paper was confined to investigating the effectiveness of individual case studies as a means of reducing plagiarism and some of the negative educational and ethical factors associated with such behaviour. Although individual case studies do not prevent a student from having their case study done by somebody else, the amount of work involved would make this unlikely.

An examination of results using a paired sample t-test showed a significant difference ($p < .001$) between the scores gained on common and individual case studies with individual case studies showing lower mean scores. Because of the attempts made to produce two case studies similar in difficulty and content, the second case study could be viewed as a revision of the first. This would lead to the expectation that marks on this second case study would be higher. The findings showed that this was not the case. This supports the contention that the lower mean scores in the second computer generated case study were the result of a decrease in plagiarism.

The first year accounting course examined in this paper is offered through various modes. In total the number of students exceeds one thousand per year. Any attempt to provide individual case studies in such circumstances using conventional manual methods would result in numerous logistic problems, for example matching solutions to case studies when marking and ensuring that tutors can do this efficiently. The performance of the computerised system under these circumstances was assessed by interviewing assessors on the time taken to mark and process case studies. The rate of assessment was the same as with common transaction case studies done in previous years (ie., four case studies per hour). This was only to be expected since each individual case study had its own solution. The time taken to extract each solution from the database was insignificant. Consequently, it is concluded that it is possible to introduce computer generated unique case studies without significantly increasing costs.

Tutors were instructed to attach the solution to the marked case study for return to students together with the normal comments that are added to a student's work. This part of the exercise proved very successful overall though one case of photocopying a transaction sheet was discovered. There were no complaints from tutors regarding the system and all papers were processed as directed. A number of improvements to administrative and control procedures were also suggested. These included printing transaction sheets on special paper to prevent photocopying and carefully checking the integrity of each transaction sheet returned. To improve control it was suggested that solutions modules be distributed to markers only after the closing date for case study submission. Other than the attempt at photocopying transaction sheets, the project appeared free of the usual plagiarism problems.

All academics involved in the project felt that individual case studies enhanced the learning process. A common reason put forward for this attitude was the likelihood that most, if not all work, is done by the student in question. Tutors noticed that individual case studies did not prevent students from learning co-operatively, which is seen as an important part of the learning experience [Johnson and Johnson 1989; Kagan 1989; Pemberton 1991]. The feedback that tutors received from students also suggested that individual case studies motivated students to perform at a higher level. This supports the findings of Connor [1985] and Cohen [1991].

Further research needs to be carried out on the attitude of students towards individual and common case studies. In particular the validity of assessment, ethical values, motivation and co-operative learning.

ENDNOTES

1. The author wishes to thank Themin Suwardy for his assistance in the development of the case study generator software.

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THE CASE STUDY METHOD IN A BUSINESS CALCULUS CLASS

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Abstract

The purpose of this paper is to provide a pedagogical approach to a very important calculus topic, the derivative. This approach involves the well know Case Study Method; it has been used successfully in many fields.

INTRODUCTION

At colleges and universities across America, thousands of freshman students enroll in a business calculus class each semester. They have no choice; it is a required course for their major. In each class how many of these young people are eager to go through this adventure? How many are really excited about this course?

You must have guessed the answer, just a handful. The vast majority is looking forward to the day the torture of mathematics is over. The comment one hears most often is that if we add up these handfuls of students we end up with an appreciable number that enjoy math and will go on to use calculus in their professional careers.

Math professors are not really concerned. The thoughts that they exchange with each other go on as follows:

- Students must take responsibility for their own learning.
- They will find out how useful calculus is later on in the business and finance classes.
- Most of them will pass the course.
- Fewer than 20% will fail it

There is truth in all these comments. Indeed the majority will not enjoy calculus, but students are survivors they learn quickly what they must do to pass it and with the inflated grading system, even their grades will be decent.

Looking at the small percentages that are going to be enlightened by the experience, learn more, enjoy the whole process, and see what calculus is about, it is obvious that these students do not need any math professor to explain what math can do for them. They have discovered it some time ago either on their own or through their parents and good math teachers.

The problem is how to make this course an enlightening experience for most students. The first step towards the solution of this problem is to ask why students do not like calculus. To most people the subject matter of mathematics is not attractive because it deals with abstractions. The average person that is curious about calculus cannot leaf through a book and get an idea about the subject. Good books on the market have fanciful and friendly covers but suddenly everything changes when one opens them and tries to understand the definitions and the notations. Students have been exposed to arithmetic, algebra, geometry, and even pre-calculus and calculus, even so they have no idea of what math is and what has accomplished in our civilization. It is shocking to discover how many consider mathematics a worthless subject, since they can not see its relevance to life.

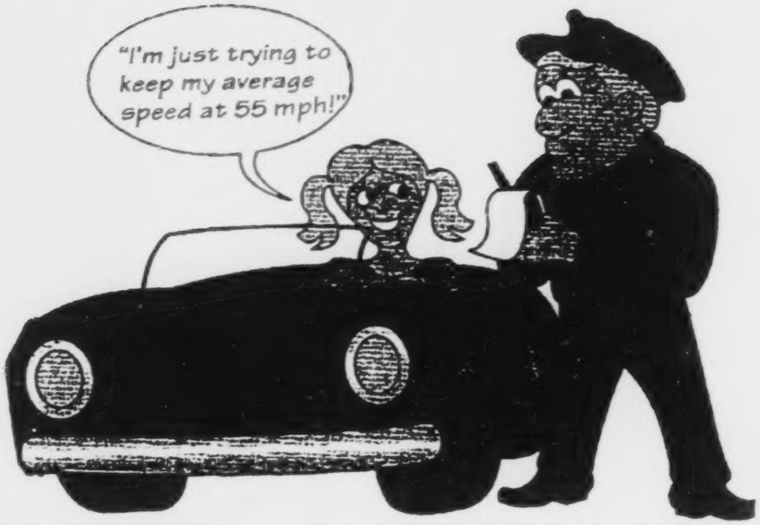
The arithmetic and algebraic skills of the average business student are poor. A lot is learned if students are given the opportunity to voice their opinions. In a business calculus class at the University of Delaware 125 students were enrolled. Two weeks before the end of the semester the professor gave them their easiest assignment to write a two page essay describing the muddiest issues of calculus. The students expressed that the muddiest issue was the tests. Second to the tests came their math background. Most of them expressed the fact that they could not do the algebra, they also blamed their schools and their elementary and secondary math teachers for the poor preparation. As one student put it, "I would definitely have to say that the muddiest part of this class is not the calculus itself, but the road that led me to calculus. I was stuck with bad mathematics teaching throughout my school years." Do we then have a solution to our problem? Unfortunately, no. At the age of 18 years one does not have the time and money to start taking preparatory math courses to build up a background. A good number of students will take one or two of these courses, but even this is not adequate, because math preparation is like the language preparation, it does take time and effort, it can not be done from one semester to the next.

In every subject students enjoy motivational talks. For example, math gives us power over nature and is the key to our understanding of the physical world. Calculus is one of the greatest achievements of our civilization and its cultural values are extraordinary. Unfortunately, the attempt to sell the beauty of mathematics to business students is doomed to fail. It is very difficult to convince a young person of the value of this difficult course for his or her life as an educated individual. It is also wishful thinking to assume that the young audience could understand the concepts from the symbols and their relationships. What purpose does it serve to claim that calculus is extremely useful and the usefulness of all its concepts is going to be discovered by every one later on in the economics and finance classes? It does sound like the participants of the course are invited to dinner, seated at a table all set up for a fancy meal, promises are made for the most delicious food and the food never arrives; what a disappointment! There is a limit to how much a professor can achieve in terms of students' learning in the time of one semester. Considering the nature of the subject and the preparation of the audience a lot can be accomplished with the case study method. Cases supply meaning and motivation, and drive students to learn more. They provide conceptual understanding.

THE CASE STUDY METHOD

The question that math professors should ask themselves is: What is the chief role of calculus in the business curriculum?

Since from a conceptual standpoint calculus is the most difficult mathematical subject, understanding by intuition is very critical. That is where cases come into the picture. These days plenty of calculus courses start with the concept of the derivative one of the most sophisticated ideas of our civilization. This new concept must be related to something that students already know, so a good way is to start with the average velocity. In other words the average rate of change of the distance in respect to time. For example, if Mary drives 300 miles in 5 hours, her average velocity is 300/5 = 60 miles per hour. This simple explanation should be done in a dialogue format before the young audience fall asleep. It must also include several different cases so every one can digest the idea of the average rate of change. Then the time comes for the instantaneous rate of change (derivative) to be explained, right then and there the professor could loose a lot of students, this does not mean they get up and leave the classroom, it means they are lost mentally and emotionally; and this is not a good beginning. Using humor at appropriate times is crucial, not only it breaks the ice, it also lessens the fear especially during the first week of the semester. The time is appropriate for the cartoon below to be placed on the overhead projector. It does not have to be a cartoon it can be the presentation of any case as long as it gives the derivative some meaning.


"I'm just trying to keep my average speed at 55 mph!"

The cartoons' young lady seems quite smart, she might be a student, she is not going to avoid the ticket because the officer does not care about her average speed. When a driver realizes that he or she is being followed by a police car the first thing that he or she does is to look at the speedometer. Why? Because at any given instant the velocity is shown on the speedometer, and this is the instantaneous rate of change of the position in respect to time which is the derivative of the position function. When this discussion is over the students are thinking to themselves, "Wow! This is so simple, actually extremely simple." And this discussion continues; we can calculate the average velocity by dividing the distance traveled by the elapsed time $\left(\frac{\text{distance}}{\text{time}}\right)$, but how do we calculate the instantaneous velocity which is the velocity at a specific moment? Do we say that the time elapsed is zero? Can we divide by zero? One can not divide by zero, instead we can calculate the average velocities at smaller and smaller and smaller time intervals. As the time intervals get smaller and smaller the average velocities approach a number, that number is the velocity at that moment. Therefore the instantaneous velocity or simply velocity is defined as the limit of the average velocity as the time interval becomes smaller and smaller. How small? So small that is close to zero which is close to that specific instant.

So is calculus easy stuff after all? No, not at all, things get more complicated because these ideas will represented with mathematical relationships and symbols will enter the picture. Good algebra will be needed for manipulating expressions and analytic geometry for explaining the concept graphically. Calculus is not an easy subject because it is taught with cases, but it becomes meaningful. There is a reason for it, not because the professor says so but because he or she lets the learners see for themselves. The process lets them use their intuition, and gives them not only understanding but also a sense of accomplishment. Some suffering will be a part of the course, after all learning is painful, but long after everything is forgotten and the mathematical expressions and symbols disappear from someone's mind the smart lady and her velocity will be remembered, because her case comes from every day life.

In a week's time the professor is ready to move into the business world with a case study from a firm that uses an international freight company to ship goods worldwide. The rate at which the shipping costs decline as the volume of cargo increases is obtained by the derivative of the cost function in respect to cargo volume. The right decision about shipping will come from knowing the rate at which the costs decline with cargo volume.

It is not hard to see that students will take an interest in the course if they see how the subject is involved. Often they claim that they do not have a math mind when, in fact, they never had inspiring and stimulating math education. Is it mandatory to use humor, is it necessary to use a cartoon to explain the concept of the derivative? Certainly not. It all depends on one's personal teaching style. One can use a different case, can create his or her own or can find one in the textbook. These days applied calculus books give plenty of applications that can be turned into meaningful cases from everyday life.

CONCLUSION

Good mathematical teaching is an art that can take many forms. One of the most inspiring forms is the Case Study Method. The method does not promise to bridge all the gaps and clear all the misunderstandings, but it sure promises to give light to many dark concepts and meaning and purpose to doing calculations.

With cases, teaching can be transformed from the mere transmission of information to a stimulating discussion. Cases and their relevance to calculus will be remembered long after the formulas are forgotten.

CARDS GAME
HAVE A GOOD TIME LEARNING COSTS[1]

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Abstract

The Cards Game, dynamic and amusing, is a didactic tool dedicated to the teaching of costs. It is directed to students with knowledge and interest on the topic, but also to any work group because, besides teaching, it facilitates interpersonal communication.

The game was conceived to improve both the teaching process and the learning of costs. Its two premises are the students' motivation and a good check of their knowledge of cost calculation of a finished production in a system of costs by work orders.

GENERAL CONSIDERATIONS

Teaching should be based on a series of considerations that are directed to learning and education. Each professor should be able to guide his teaching according to what best suits him and his students. At the same time he should pay attention to some fundamental aspects involving the teaching process like students' lack of interest. By offering students some stimulus, the professor stimulates their action and reaction and facilitates their learning.

Another important aspect to mention is fulfilment. It is obtained by simulating a reality when students do not have a direct access to companies to strengthen their learning and make it last.

Therefore, a game was conceived as a didactic tool to improve the teaching process and the learning of costs while motivating students to have a bigger interest in studying the subject. Learning costs is the single most important tool students will ever need in their practice and as a consequence in their professional life. Observations show that course rejection is causing career hold up.

The game introduces a dynamics that encourages and occasionally delights students to study the costs thematic minimizing the level of rejection that can be felt toward the course. Acquired knowledge is also strengthened without going through the daily routine of theoretical classes and quizzes.

The game is directed to undergraduate students that know the basic terminology of costs accounting and costs system by work orders. Other students that have studied the subject and show some interest in the topic can use it too.

GENERAL OBJECTIVE

The objective of this paper is to present this didactic tool used to teach costs. The focus is on one fundamental aspect of the teaching process which is "the achievement of something that provides students with a task to perform besides taking notes."

SPECIFIC OBJECTIVES

The Game, based on a deck of playing cards, is a simulation of the procedure used to determine the cost of a finished production, thanks to:

1. The accumulation of production costs according to each element of cost: direct materials, direct manpower and indirect costs of production. During the simulation the following elements are used: letters, tokens and boards (simulating costs sheets). Participants will manage these items according to instructions given to develop the game.
2. The costing of finished good produced at a given time, using an electronic calculation sheet on Excel program. All accumulated costs will then go there when the game is finished.

The simulation process is established with a cost system by work orders characteristics, which gives:

a) The production unit cost of item X which will be used, in this case, to:
   - Value inventories; and
   - Determine production cost and sales.

GAME ASSUMPTIONS

To carry out the simulation, we used information from a practical case related to a fictitious company named MOL-PAR. This company manufactures product X under the following assumptions:

a) We know that damaged and faulty units coming from an efficient production process (normal damage) or damage in excess of what is considered normal (abnormal damage) are accounted for in any company due to the importance of decision planning and inherent control production. MOL-PAR has set a five per cent threshold for units damaged and faulty in the normal course of the production process. In order to calculate the cost of those units students can use one of these two methods:
   - Assign them to all work orders;
   - Assign them to specific work orders.

According to the students' level, both cases can be solved.

b) For the beginning of this particular period the company is in a production mode.

GAME CONTENT

1. Game foundations
2. Players' identification by letters A, B, C, D, E, and F. These letters will represent the company departmental units.
3. Thirty (30) cards. Each card has the company logo (MP) on one side, and a caption with a number related to the game on the other side.
4. Two (2) additional cards. Each additional card has the company logo (MP) on one side and on the other side a caption related to the corresponding method for calculating units damaged and faulty in the normal course of the production process.
5. A total of sixty six (66) tokens. Each player has eleven (11) identical numbers. Each token represents a number which appears on the board.
6. A total of six (6) boards. Each board represents a cost account sheet by work orders. In costs accounting this sheet summarizes the value of direct materials, direct manpower and indirect costs of production applied to each work order or production mode.
7. A 3½" disk with a PowerPoint presentation of the game and a calculation sheet in Excel program.

GAME PARTICIPANTS

Will participate in the game:

- Six (6) players, identified by the letters A, B, C, D, E, and F;

- A moderator that facilitates the sharing of instructions about the game development and then circulates the information provided by the winner in the calculation sheet;
- A letter dealer;
- A supervisor will exchange players' letter for the corresponding token and check the game development and the information provided by the winner to the moderator.
- The Exchange Centre will give to the supervisor the token in exchange for the card.

GAME FOUNDATIONS

- Give to each player a board and give him a maximum of five minutes to get used to it.
- Select the letter that indicates the method used to calculate units damaged and faulty in the normal course of the production process according to one of the game assumptions.
- The dealer deals all the cards among the players (five cards for each player) from right to left.
- Each player will check his cards. If they have the right information they can start exchanging a card for a token that will be placed on their board, always from right to left.
- Players will return all letters to the dealer who will continue to deal the cards. This procedure will be repeated as many times as necessary to achieve the game objective.
- The winner is the player that fills the board first with the required information, i.e. when he has accumulated production costs.

AWARDS

1. If after the fourth hand of the game a winner has not come out, the first award will be given to the player that has the most points when tokens on his board are added. This should motivate the other players to go on playing.
2. Finally, the game moderator gives the award to the winner.

FINAL CONSIDERATIONS

The Cards Game has been run by some professors from the Accounting and Finance department of the Faculty of Economic and Social Sciences of the Universidad de los Andes. My undergraduate students in Costs Accounting played the game to check its dependability and its genuineness. Their suggestions and recommendations have been integrated to the Game.[2]

ENDNOTES

1. The Cards Game is dedicated to my husband and to my daughters. Without their support, encouragement, and patience, it would not have been possible.

2. My thanks to my colleagues and to the students for their time and their suggestions that allowed me to improve the game.

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AUDIT EVIDENCE: THE PROFESSIONAL STANDARDS AND THE USE OF CASES TO TEACH CONCEPTS

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Abstract

Auditors gather evidence to formulate their judgment on financial statements and in assessing the risk factors concerning the company under audit. This paper examines the role played by the American Institute of Certified Public Accountants and the Securities and Exchange Commission in developing auditing standards concerning audit evidence. A classroom approach to using significant court and SEC cases relating to audit evidence is described and the cases discussed.

INTRODUCTION

The ultimate purpose of the audit is the gathering of evidence that support the auditor's expression of an opinion. Audit evidence has been defined by philosophers, jurists, astronomers, to mathematicians, the medical profession, and scientists. The accounting and auditing professional associations have studied audit evidence, promulgated statutes, issued statements on auditing principles and interpretations to clarify auditing principles in an attempt to create a framework for a theory of audit evidence.

In this paper we will first explain what audit evidence is. We will then follow the chronology of the pronouncements of the American Institute of Certified Public Accountants (AICPA) in promulgating auditing standards dealing with audit evidence. This establishes a framework for the study of specific landmark court and SEC cases that have driven the establishment of the audit evidence standards in the United States and have influenced the standards internationally. An explanation is given on the use of these cases in teaching audit evidence in an auditing course. The paper concludes that the gathering of evidence is fundamental to the audit process and that teaching these concepts through the study of actual cases enriches the student's learning experience.

WHAT IS EVIDENCE?

Evidence has been defined by several jurists, high profile accountants, and professional accounting organizations. In 1827, Jeremy Bentham, in his treatise titled *Rationale of Judicial Evidence*, defined evidence as "any matter of fact, the effect, tendency, or design of which, when presented to the mind, is to produce a persuasion concerning the existence of some other matter of fact: a persuasion either affirmative or disaffirmative of its existence." Bentham's definition of evidence is based on the concept of persuasiveness.

In the book *The Philosophy of Auditing* (a known classic in the auditing literature), [Mautz and Sharaf, 1963] classify evidence into three broad categories of natural evidence, created evidence, and rational argumentation. These are explained as follows:

- Natural evidence is that which exists all around us. It is the most convincing evidence available.
- Created evidence requires effort to bring forth, e.g., an auditor's own computation. To the extent that created evidence is equally simple and clear as natural evidence, it may be equally compelling.
- Rational argumentation may constitute evidence, e.g., when ideas or conditions follow logically from observed facts, they seem to be true.

In August 1980, the Auditing Standards Board (ASB) of the AICPA issued SAS No.31, *Evidential Matter*, and defined evidential matter supporting the financial statements as consisting of "the underlying accounting data and all corroborating information available to the auditors." Underlying accounting data includes the books of original entry, ledgers, and supporting work sheets. Corroborating information includes such documentation as canceled checks, bank statements, sales invoices, vendors' invoices, time cards, requisitions, purchase orders, bills of lading, and shipping orders. It also includes evidence developed by the auditor, such as confirmations, observations, recalculations, and reconciliations.

In 1993, the American Accounting Association (AAA) defined auditing as:

> . . . a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between those assertions and established criteria and communicating the results to interested users.

Wanda A. Wallace [1995] explains that the auditor collects evidence to reach an opinion about the fairness of financial statements. The evidence must be of such a quality "that another auditor, exercising due care, would be expected to reach similar conclusions."

Robertson and Louwers [1999] sum up the meaning of evidence as all the influences upon the minds of auditors that ultimately guide their decisions.

The roles of the AICPA and the SEC have been pivotal in shaping the auditing standards and auditing procedures regarding evidence. The promulgations from these organizations should be understood as a basis for understanding the evidence necessary to substantiate an audit. This background prepares the student, in a classroom setting, for meaningful discussion of the cases that have influenced the promulgation of the standards. The auditing standards regarding evidence promulgated by the AICPA are discussed in the following section.

THE ROLE OF THE AICPA

In 1936, the American Institute of Accountants (AIA) issued a pronouncement titled *Examination of Financial Statements by Independent Public Accountants*. It did not require confirmation of receivables in the case of companies having an adequate system of internal control. In the case of inventories, the external auditor relied principally on information from the responsible officers and employees of the company.

In 1939, the spectacular fraudulent case of McKesson & Robbins, Inc. changed all that. It brought to the public attention that independent auditors had issued an unqualified opinion on financial statements without observing the physical inventory on hand nor confirming accounts receivable balances with debtors. This led the AICPA to appoint the Committee on Auditing Procedures (CAP) to examine audit procedures and other "public discussions" related to McKesson & Robbins regarding a $19 million overstatement of inventory and accounts receivable.

In 1939, CAP issued the Statements on Auditing Procedures (SAP) No.1, *Extension of Auditing Procedures*, which recommended:

- observation of physical inventory,

- direct confirmation from the debtor which should be regarded as a normal audit procedure in all cases where receivables constituted a significant proportion of total assets,
- appointment of independent certified public accountants,
- a report from the independent certified public accountant, and
- authorized the substitution of other procedures under certain circumstances.

In 1951, the CAP observed that an examination of financial statements did not include the misappropriation of assets and other irregularities and adopted the following resolution:

The ordinary examination incident to the issuance of an opinion respecting statements is not designed and cannot be relied upon to disclose defalcations and other similar irregularities, although their discovery frequently results.

The AICPA contends that a detailed examination of the evidential matter underlying the financial statements is not called for by the "reasonableness" clause or cost/benefit relationship. However, the possibility of material errors or irregularities should influence the independent auditor to adopt a skeptical attitude in the examination of the evidential matter underlying the fairness of financial statements.

In November 1974, the ASB issued SAS No. 1: *Generally Accepted Auditing Standards*. The third standard of fieldwork requires the auditor to accumulate sufficient competent evidence to support his opinion:

Sufficient competent evidential matter is to be obtained through inspection, observation, inquiries, and confirmation to afford a reasonable basis for an opinion regarding the financial statements under audit.

In March 1975, the Financial Accounting Standards Board (FASB) released a discussion memorandum entitled *Analysis of Issues Related to Criteria for Determining Materiality*, which lists the following factors that are weighted by auditors in materiality judgments and by investors and creditors in making investing and lending decisions: (a) environmental factors, (b) enterprise related factors, (c) accounting practices, and (d) uncertainty.

In January 1977, the ASB issued SAS No. 16 (superseded by SAS 53, *The Auditors' Responsibility to Detect and Report Errors and Irregularities* (Section 316) and stated:

The auditor should plan and perform his examination with an attitude of professional skepticism, recognizing that the application of his auditing procedures may produce evidential matter indicating the possibility of errors and irregularities.

The auditor cannot be expected to extend his auditing procedures to seek to detect unrecorded transactions unless evidential matter obtained during his examination indicates that they may exist. For example, an auditor ordinarily would not extend his auditing procedures to seek failure to record the receipt of cash from unexpected sources.

In January 1977, the ASB also issued SAS No. 17 (superseded by SAS 54), *Illegal Acts by Clients*, which even more explicitly requires design of the audit to provide reasonable assurance of detecting material errors and irregularities. Both SASs 16 and 17 have been credited to the SEC chief accountant's persuasive ability [Sack 1987].

In June 1977, the ASB issued SAS No. 19, *Client Representations*, which requires that independent auditors obtain written representations from management to complement other auditing procedures. Refusal to furnish written representations constitute a scope limitation that is sufficient to preclude an unqualified opinion.

In August 1980, the ASB issued SAS No. 31, *Evidential Matter*, which stated that the audit consists primarily of obtaining and evaluating evidence about the assertions in the financial statements. Evidence is anything that provides a basis for belief; it tends to prove or disprove something.

In June 1981, the ASB issued SAS 39, *Audit Sampling*, and recognized that statistical sampling is just one source of evidence and is not required. It permits the auditor to use judgmental assessment made to evaluate the compliance test with the sample results.

In 1983, the ASB issued SAS No. 47, *Audit Risk and Materiality in Conducting an Audit*. The external auditor, in gathering evidence, must look for material errors that may render financial statements misleading, whereas, this rule does not apply to internal auditors since any errors may lead to a potential fraud. The framework of SAS No. 47 indicates that audit risk consists of three components: inherent risk, control risk and detective risk. The Auditor should assess inherent risk and control risk to ascertain how much detection risk can be accepted and still restrict audit risk to an appropriate level [Alderman and Tabor 1989].

SAS No. 47 also discusses materiality of errors in relation to the impact on the financial statements being audited. Materiality is used primarily in relation to the potential impact an identified error may have to the organization's financial statements. The statement directs the auditor to examine the industry in which the client operates when evaluating the likelihood of material errors. It defines audit risk that the "auditor may unknowingly fail to modify his opinion on financial statements that are materially misstated." SAS No. 47 requires that auditors make a "preliminary judgment about materiality level" in obtaining an audit but offers limited guidance on how this measure should be determined. Several rules of thumb on how to arrive at a preliminary judgment about materiality have developed from practice and academic research. While all these represent plausible methods for quantifying materiality, the resulting materiality measures could be significantly different. Pany and Wheeler [1989] provide empirical evidence that differences can and do commonly occur, depending on the industry of the client and the definitions chosen.

Peress [1986] suggests the establishment of a preliminary judgment about materially during the audit planning phase since it helps to determine the extent of the evidence needed. Read et al. [1987] also recommend that materiality should be considered during the planning stage of an audit in order to determine the amount of evidence needed to evaluate the financial statements at the end of the audit. Planning materiality should be used to evaluate both likely errors and possible further errors, and the appropriate client should be informed of known and likely errors found during the audit. To determine how auditors make preliminary materiality judgment, they selected 47 auditors for two case studies. The results suggest that the level of agreement increased as the degree of auditor experience increased, and the commonly used basis for planning materiality judgment was pretax operating income.

In 1988, the ASB issued SAS No. 53, *The Auditor's Responsibility to Detect and Report Errors and Irregularities*, which requires auditors to design engagements to provide reasonable assurance of detecting material errors and irregularities, and to consider industry characteristics to improve error detection ability:

The auditor neither assumes that management is dishonest nor assumes unquestionable honesty. Rather, the auditor recognizes that conditions observed and evidential matter obtained, including information from prior audits, need to be objectively evaluated.

In April 1988, the ASB issued SAS No. 55, *Consideration of the Internal Control Structure in a Financial Statement Audit*. The statement suggests that the auditor, in gathering evidence, should obtain sufficient understanding of the policies and procedures related to the control environment, the accounting system, and the control procedures. The auditor's responsibility for assessing control risk recognized the importance of the structure of evidence and its relation to various audit objectives: After obtaining this understanding, the auditor assesses control risk for the assertions embodied in the account balances, transaction class, and disclosure components of the financial statements.

In April 1988, the ASB issued SAS No. 56, *Analytical Procedures*, to gather evidence in the planning and final stages of the audit. It defines analytical procedures as a comparison of recorded amounts or ratios developed from recorded amounts to expectations to be used in the planning and final review stages of all audits. It provides guidance on the use of analytical procedures and emphasizes the benefits of using analytical procedures as a substantive test. For Callahan et al. [1988], the statement will have the greatest potential impact in audit effectiveness through its guidance in using procedures and substantive tests.

In April 1988, the ASB issued SAS No. 57, *Auditing Accounting Estimates*, urging the auditors to obtain sufficient evidence to provide reasonable assurance that: (a) all accounting estimates material to the financial statements have been developed, (b) these estimates are reasonable in the circumstances, and (c) they conform with acceptable accounting principles and are properly disclosed.

On June 15, 1992, the ASB issued SAS No. 67, *Confirmation Process*, which provides guidance in evaluating confirmation evidence as well as performing alternative procedures. It was issued because of recent empirical research showing that auditors have at times relied too greatly on the confirmation process for audit evidence. The new standard warns against this overdependence. SAS 67 mandates confirmation procedures be performed as a function of overall audit risk, inherent risk, and control risk [Levine and Fitzsimons 1992]. It also permits receivable confirmation not to be requested if assessment of inherent risk and control risk, in tandem with substantive tests, reduce audit risk to an acceptable level [Wallace 1995].

In 1993, a special report by the Public Oversight Board (POB), *In the Public Interest: Issues, Confronting the Accounting Profession*, went so far as to suggest:

> The sufficiency and competence of evidential matter available to auditors to assess management assertions about sensitive valuation judgment and other estimates often do not reduce audit risk sufficiently to justify the degree of assurance provided in the auditor's report in historical financial statements [AICPA 1993].

The POB recommended the AICPA Auditing Standard Board "revise the auditor's standard report to make the prospective nature of certain accounting estimates clear, including a caveat that the estimated results may not be achieved." It added that "this communication should not be written as a defensive retrenchment by the auditing profession, but rather as a more realistic and reasonable explanation of the limitation of assurance that can be provided on certain accounting estimates."

The AICPA's Committee on Financial Reporting chaired by Ed Jenkins indicates that users will be on the lookout for more information about risks and uncertainties. Auditors can add value by providing independent assurance regarding the reliability of amounts reported and of accounting disclosure [Smith 1994].

On December 15, 1994, the ASB issued SAS No. 73, *Using the Work of a Specialist* (which supersede SAS No. 11). The new SAS provides guidance for auditors who use the work of a specialist as evidential matter in performing an audit in accordance with generally accepted auditing standards. It applies to auditors who use a specialist's work as evidential matter in performing substantive tests to evaluate material financial assertions.

In 1996, the ASB issued SAS No. 80, *Amendment to SAS 31, Evidential Matter*, to recognize that audit evidence that previously existed primarily in documentary form often exists now in the form of electronic file images. The statement provides guidance to auditors in handling engagements in the electronic world [Moreland 1997].

In 1997, the ASB issued SAS No. 82, *Consideration of Fraud in a Financial Statement Audit*. The standard requires the independent auditor to discuss with management the possibility that evidence has been materially misstated to constitute fraud and the related risks:

> The auditor also should inquire of management to obtain the client's view regarding the risk of material misstatement due to fraud. Some examples of matters that might be discussed as part of the inquiry are (a) were there particular subsidiary locations, business segments, types of transactions, accounts balances or financial statement categories where fraud risk factors exist or may be more likely to exist and (b) how management may be addressing such risks.

Requiring management to discuss with the auditor the possibility that evidence has been materially misstated came about in part from the problems identified in the SEC Enforcement Releases from 1938 to the present. The Releases indicate that in most cases involving business fraudulent activity the evidence has been suppressed or manipulated with the intent to deceive investors and creditors. We will now examine the role the SEC has played in fostering appropriate audit evidence by reviewing some of the landmark cases in which it has been involved.

THE USE OF CASES TO STUDY AUDIT EVIDENCE

The SEC has been involved with several landmark cases that have dramatically affected the auditing profession regarding evidential matter. By studying actual cases, the issues become more imbedded in the student's understanding than is generally accomplished simply by memorizing the AICPA standards discussed above, many of which have resulted from these cases.

An effective way for accounting students to study audit evidence, which is typically addressed in auditing courses, is to divide the class into groups of two or three students. Each group is assigned a case that is discussed in the next section of this paper. Each group must locate their assigned case, analyze it, and prepare a written brief identifying the issues raised and the impact the case had on evidential matter required in independent audits. Each group is required to make a formal presentation on their case in class.

The use of cases to study audit evidence facilitates active learning through interactive group work and through increased class discussion. It fosters the development of analytical, interpersonal, and communication skills as students work together to complete their assignments. Each student is required to understand and hopefully appreciate the significance of every case discussed in class.

THE SEC AND LANDMARK CASES

The cases discussed below show that a lack of sufficient evidence, auditors' lack of skeptical attitude, and gross negligence in considering risk factors in securing appropriate audit evidence have contributed to the prosecution of auditors and officials of major corporations. As a result, through these cases and other cases, and the actions of the SEC, the auditing standards promulgated by the AICPA discussed above have emerged.

As discussed earlier, in 1939, in the landmark case of *SEC v. McKesson & Robbins*, the SEC conducted hearings which disclosed the insufficiency of audit evidence underlying the audited financial statements of McKesson & Robbins, Inc., a drug company listed in the New York Stock Exchange. This case involved $19 million of fictitious assets, about one fourth of the total assets shown in the McKesson & Robbins balance sheet. The fictitious assets included $10 million of nonexistent inventory. At that time, the standards did not require auditor observation of inventories. In 1940, the SEC issued Accounting Series Release (ASR) No. 19, "In The Matter of McKesson & Robbins, Inc." requiring the taking of physical inventory as a procedure for substantiating the evidential matter. The SEC suggested that auditors investigate the management of new clients and noted:

- Numerous auditing procedures require strengthening inventory procedures.
- Auditors should be responsible for detecting gross misstatements whether resulting from collusion or otherwise.
- Auditors must recognize their responsibility to the public investors by including management activities in their review.

Mautz and Sharaf [1963] remind us of the role of the SEC under the federal securities acts of 1933 and 1934 which has the responsibility: (a) to prescribe both the form and content of financial reporting for public companies, (b) to see that evidence of material facts is not suppressed or manipulated, and (c) to protect investors and creditors.

In 1967, in Fischer v. Kletz (known as *Yale Express*), 266 F. Supp. 180 [S.D.N.Y.,], the company issued financial statements which were materially misstated. They reported a net income of $1,400,000 instead of a loss of $1,254,000 and charged to retained earnings an additional $629,000. In gathering evidence, the auditor did not exhibit a skeptical attitude and was easily satisfied by management assertions. The suit was filed under Section 182 of the 1934 Securities Act and Rule 10b-5. The court noted:

The auditor has a duty to anyone still relying on his report to disclose subsequently discovered errors in the report. This duty exists regardless of the auditor's lack of financial interest in any transactions to which the information relates. The obligation arises because of the auditor's special relationship that provides access to the information.

In 1968, the landmark fraud case *Escott v. BarChris Construction Corporation* [283 F. Suppl 643] represents a violation of Section 11 of the 1933 Securities Act. The plaintiffs claimed that the registration statement for debentures contained materially false statements and material omissions. The court's opinion noted that the CPA firm failed to comply with generally-accepted auditing standards (GAAS). The judge reprimanded the auditor for not exercising a skeptical attitude and stated that the auditor "was too easily satisfied with glib answers to his inquiries. But there were enough danger signals in the materials which he did examine to require some further investigation on his part."

In 1969, lack of sufficient evidence was noted in the fraud case *United States v. Simon*, [425 F. 2d 796]. This case is known as the *Continental Vending* case. It involved both criminal and civil proceedings against three CPAs. The U.S. government's case of fraud against the CPAs was initiated on the grounds that Continental's audited financial statements were misleading. The finding by the jury that the balance sheet did not present fairly Continental's financial position led to the conviction of the three CPAs. The auditors were found guilty, were fined $17,000, and their licenses to practice as CPAs were revoked.

In 1974, the *Equity Funding* fraud caused a scandal in the business community. The *Wall Street Journal* [1974] reported that a financial vice president testified that he was ordered by the firm's chairman to falsely inflate the profits. Robert Loeffler, the court appointed trustee of Equity Funding, grouped the fraudulent activities into three categories: (a) the creation and inflation of assets in the balance sheet; (b) the borrowing of cash without recording the corresponding liability; and (c) the creation of phony insurance which was sold to other insurance companies. The Equity Funding fraud provides an example of the importance of obtaining information about the respondent to a confirmation request. When the auditors requested to confirm $24 million of securities represented as being held in safekeeping by a well-known bank, company personnel involved in the fraud addressed the request to a mail drop set up under a name similar to the bank's. These personnel received the request, signed the confirmation, and returned it to the auditors who accepted it as adequate evidence of the securities existence [Carmichael 1991].

In 1974, the fraud case of *Hochfelder v. Ernst & Ernst*, [503 F. 2d 1110], represents a violation of the Rule 10(b)-5 under the Securities Exchange Act of 1934. The suit was brought by a group of investors against the CPA firm that audited the First Securities Company of Chicago, a small brokerage firm. The president had persuaded the investors to mail him their personal checks for a fund from which he was to invest in escrow accounts yielding high returns to the investors. It was discovered later that no such escrow accounts with accounting records of the First Securities Company existed. The president had diverted the investors' checks for his own use.

In 1975, the SEC alerted the auditing profession on the importance of the confirmation of accounts receivable and their write-off as required procedure for gathering audit evidence. In the *United States v. Natelli*, 527 F. ed 311 [1975], known as the *National Student Marketing Corporation* case, two auditors were convicted of criminal liability for failing to properly disclose the write-off of uncollectible accounts. The accompanying footnote failed to indicate that regular sales for 1968 were overstated 20% and actual net earnings were only 46% of the reported earnings.

On August 18, 1982, the SEC issued Accounting and Auditing Enforcement Release No. 2, *Administrative Proceedings File No. 3-6061*. This release emphasized that auditors are responsible for the accuracy of the evidence gathered—such as reviewing the cash disbursements journal for missing check numbers, rechecking the accuracy of the total cash disbursements journal, or reviewing the general ledger for unusual postings.

In 1982, the SEC reiterated the importance of gathering evidence on inventory as seen in the case of *Cenco Inc. v. Seidman & Seidman*, 686 F. 2d 449 [7th Cir], in which the defendants were charged with violating SEC Rule 10b-5 and several federal securities laws. The case dealt with the auditors' failure to detect a $25 million inventory fraud perpetrated by top management. The risk of not gathering sufficient evidential matter may result in financial statements materially misstated.

One of the general categories of auditing-related problems cited extensively in the last two decades was the failure to adequately document audit evidence in work papers. Instances of insufficient competent evidence regarding management's assertions about existence or occurrence, completeness, allocation and valuation, rights and obligations, and presentation and disclosure have been routinely scrutinized by the Securities and Exchange Commission as noted in the next few instances.

On August 6, 1986, the SEC issued Accounting and Auditing Enforcement Release No. 109A and reported that *United States Surgical Corporation's* 1980 and 1981 audits were inadequate. The auditors failed to plan and perform sufficient audit procedures to gain evidence that $2.8 million in fees were part of a "global litigation strategy" and were patent-related. Relating to this, the auditor knew that the client was amortizing $5.8 million over a ten year period. There was insufficient inquiry to detect that the period of amortization was in violation of GAAP. Despite several material deficiencies, the auditors issued an unqualified opinion [Oliverio 1987].

On September 19, 1986, the SEC issued Accounting and Auditing Enforcement Release No. 111. This release noted that the audit of, *Tri-Comp Sensor Inc.* failed to disclose material related transactions involving loans to or by the company. The auditors failed to scrutinize the related transactions and require management to disclose them for the benefit of investors and creditors [Oliverio 1987].

On September 24, 1986, the SEC issued the Accounting and Auditing Enforcement Release No. 114 which reported that *Worldwide Venture Corporation's* audit was found deficient in many respects. Worldwide, with the approval of the auditor, assigned arbitrary value to its restricted stock used to acquire a joint venture. The auditor relied upon an appraisal and did not question the individual who had prepared the appraisal report. If the auditor had conducted his search for evidence, he would have discovered that the figure given was not an "appraisal" but rather a "Letter of Valuation" [Oliverio 1987].

On October 10, 1986, the SEC issued Accounting and Auditing Enforcement Release No. AE-115. In this release the SEC reported that the audit of the financial statements of *Quantum Financial Services* had been deficient. The auditor failed to determine the ownership of a building although they knew that the property was maintained in the name of a partnership [Oliverio 1987].

On January 28, 1987, the SEC issued Accounting and Auditing Enforcement Release No. AE-127 and noted that the audit of *Saxon Inc*. contained several instances of insufficient competent evidence. Management admitted that inventory had been falsified by about 10 to 20 million dollars over the previous year. The auditor failed to require a comparison of the physical inventory count with the company's records [Oliverio 1987].

Relating to the deficiencies to substantiate audit evidence noted repeatedly in the SEC administrative proceedings discussed above, Oliverio [1987] observed the following audit shortcomings:

- Willingness to accept client representation without any further verification.
- Failure to understand clearly the limitation of the evidence available.
- Failure to pursue lines of inquiry or proper trails to resolve all issues that arise.
- Failure to be careful in reviewing the evidence to note the gaps and inconsistencies.
- Failure to be responsive to high risk matter, such as related party transactions.

CONCLUSION

There are many dimensions of auditing that relate to the theories of science, economics, law, philosophy, and mathematics. An audit might be perceived as a scientific investigation where the tenets of behavior are well-established, the evaluation of quality of performance can be derived with adequate reliability and validity. The planning for an audit from the perspective of a scientific method include: (a) a specification of the evidence needed to express an opinion, (b) specification of the procedures for the performance of substantive tests, and (c) careful communication to the audit staff of what needs to be done [Oliverio 1984].

Fraud and bankruptcy often are found in lawsuits against auditors frequently due to the lack of evidence that the auditors should have obtained to support their opinions. The auditor's detection and disclosure responsibilities in these areas are the focus of the Private Securities Litigation Act of 1995. The act reaffirms the auditor's responsibilities regarding SAS No. 54, "Illegal Acts by Clients," and SAS No. 82, "Consideration of Fraud in a Financial Audit" [Palmrose 1997]. The SEC's Accounting and Auditing Enforcement Releases (AAER) designate each fraud as commonly occurring or arising from fictitious evidence of transactions. Over 80 percent of bankrupt public companies, with fraud and auditor litigation, have SEC enforcement actions [Bonner et al. 1998]. The SEC often describes in an AAER, the nature of the fraud. For instance, revenue fraud are more common than payable fraud [Loebbecke et al. 1989]. This knowledge should help auditors understand the risk of revenue verses payables transactions and hence influence the evidence needed to support their opinion.

Students gain useful insight and understanding of the issues underpinning the development of the AICPA's auditing standards and the SEC's accounting and auditing enforcement releases through a study of the landmark cases that have influenced current practice requirements. These cases have not only impacted the development of auditing standards in the United States, but have had significant influence on auditing standards internationally.

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INNOVATIVE CASE-LEARNING FOR CENTURY-21

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Abstract

Mega-learning can be reinforced in many ways. One novel way is by continual repetition through audio-visual media, where information is presented n a risk-/stress-free environment—auto-suggestion, suggestology, sophrology, biofeedback, etc. Another approach is to have abstract ideas in the sciences translated into physical learning aids, where the kernel of the analogy can be retained for comprehending and reinforcing differing situations, and for cross-disciplinary usage.

INTRODUCTION

American education is in a state of great ferment and confusion, as we enter Millennium-3. Simultaneously, there is much interest in promising alternatives and innovations in education, exhibiting possibilities for new curricula and new instructional patterns---as well as a sharp break with traditional forms of college programming, to get students to think, and to perform serious inquiry into the various disciplines [8]. But, unfortunately, there is no quick-fix to educational reform. The future goal is speculated upon [7]:

- What if it were possible to transfer information without the circuitous paths of present ways of teaching? What if a teacher could guide a student beyond the normal capacity of his/her mind by "broadcasting" over the student's defense mechanism of the normally unused 90% of the brain?

A technique that could break through the barrier in the mind that prevents us from making use of the major part of our intellectual capabilities would be revolutionary, and have many societal and ethical implications.

As Toffler so well states: "Accustomed to coping with low diversity and slow change, individuals and institutions suddenly find themselves trying to cope with high diversity and high-speed change. The cross-pressures threaten to overload their decisional competence [12]."

CASE METHODS REDUX

LEARNING AIDS AND DEVICES

Schools (and businesses) are struggling to find ways to educate their students (and employees) on various subjects and technologies. Teacher- led or instructor-led training is expensive and difficult to work out logistically. Interactive, contextual learning is required that is fast, multimedia-based and stimulating. The Internet for schools (or company's intranets services) may become the future medium for teaching, lecturing and demonstrating incremental yet continuing lifetime training in distance-learning.

Some educators refer to the merits of "learning by experience" rather than by lecture or presentation---evoking the work of John Dewey and Maria Montessori, who had suggested "hands-on" experiences to enhance cognitive learning.

Learning aids, devices and simulation techniques will be explored for state-of- the-art reinforcement of teacher-talk, and clarify ideas and concepts. One way to reinforce concepts--tactical as well as Operations Research (OR) type and Systems Analysis (SA) type strategic problems--is to devise "hands-on" simulations and/or appropriate analogies. Models are classified in terms of the system being modeled; such as, continuous versus discrete, deterministic versus stochastic, physical versus mathematical. A further distinction is made between static and dynamic models. For mathematics, the split is between analytical and numerical models. Management games, workshops and/or training exercises illustrate the complex relationship between decision-making processes and new information technology systems. Models are neither true nor false; their value is judged by the contribution they make to our understanding of the system or concept they represent [5].

Most managers/educators are not good at dealing with random events and/or with probabilities. Managers do not think easily in terms of odds, probabilities and statistics. Game theory introduced in 1944 by Von Neumann and Morgenstern has been used to predict not only fine-tuned environments, but also strategies on higher-ordered, broad, adaptive, directional, fuzzy protocols---attempting to guess, predict and forecast everything under the sun. Their indiscriminate hubris ultimately reinforces the impossibility of prescribing intelligent, rational algorithms for action decisions in a multi-person situation where interests are conflicting, or for a "status-quo" Wave1 world that no longer exists, or a Wave-2 world in chaos and frenetic transition.

The use of learning aids and simulation techniques has been explored by educators at various levels: Escalante (Garfield High School) uses a wind-up walking-shoes toy for a step-by-step approach to algebra, and a plastic monkey climbing up and down a small pole to illustrate the inverse math function—exchanging y for x; Dr. David Carson (Rensselaer Polytechnic Institute) creates a level playing field for science and humanity majors using some Tinkertoy blocks for his courses in technical writing and editing; Marva Collins (Chicago Westside Preparatory School) uses a number of original learning aids; Deirdre Donovan (Transit Tech, NY) uses visual play—cartoons, art prints, movie clips—to win "special education" converts to Shakespeare; Dr. Victor Selman (The American University) uses a multiplicity of modified toys and simulated models to reinforce concepts and hasten their absorption in business management and production. Selman will demonstrate his basic MEDICASA Model for business usage--- Measurement, Efficacy, Data Development, Imagery and Integration, Computerization, Analysis, Sensitivity, and Applicability to Objective---showing how this model permits easy absorption of the kernel of wisdom inside each abstraction. Models cannot replace the real world; at best, they can reduce a complex system to manageable patches---becoming virtual educational innovations [8].

At the current Tokyo Toy Fair the MIT Media Laboratory's Toys of Tomorrow Project [which has sponsors including Warner Bros. and Intel] made their debut with Media Technology Professor Michael Hawley's comment--"Toys aren't just for playing around---they are tools that can help us turn our dreams into reality." But the idea behind the MIT project is to use technology to create toys and devices that let users take more creative control; e.g., by programming a dancing robot, or composing music. The popular Furby doll can speak 800 words and phrases, and has more computational power than the lunar module.

BIOFEEDBACK MECHANICS

Dr. Neal Miller (Rockefeller University) conducted a series of experiments—within a behaviorist framework-- that suggest the possibility that man can train and control not only his mind and his skeletal muscles, but the deepest visceral processes. When it comes to interpreting his discovery, however, scientists tend to divide into two camps: one group, drawing on communication theory, stresses the purely informational aspect of the feedback signals; the other group, drawing on behaviorist learning theory, stresses the role of the feedback signals in reinforcing appropriate responses.

Scientists who have studied the electroencephalograph (EEG) records of yogis and Zen monks during meditation have detected "brain wave" patterns not normally found in waking, drowsy, or sleeping subjects, or in people under hypnotic trance.

In Western culture, Miller wrote, the prejudice against visceral learning goes back at least as far as Plato's "invidious dichotomy" between the higher, rational soul in the head and the lower, appetitive souls of the body. "Since ancient times, reason and the voluntary responses of the skeletal muscles have been considered to be superior, while emotions and the presumably involuntary glandular and visceral responses have been considered to be inferior [5]."

On one level, the visceral-learning experiments directly challenge the assumptions that lie behind Western man's profound alienation from his own body. On another level, Miller opens the door for a fresh look at some of the so-called higher mental processes, like consciousness and volition---which have resisted satisfactory behavioral formulation.

Another experimental cognitive psychologist Joe Kamiya suggested a prototype of subjective phenomena may be found in the field of dream research. He showed that when people were informed about the electrical activity of the brain through an EEG feedback system, they could learn to control a specific brain-wave pattern—the alpha rhythm—and that such control was often associated with subjective experiences described in the practice of the simplified yoga-like technique of transcendental meditation.

Alpha-wave training may turn out to be a shortcut to bodily control. As yet, however, no one really understands the functional relationship between brain-wave patterns, on one hand, and behavior and personality traits, on the other. Or even, it seems, how the right- and left-brain really function together.

IN PASSIM

The goal stated above is exactly what Dr. Georgi Lazanov believes he has created---a teaching method that speeds up learning 50 times, increases retention, requires virtually no effort on the part of the student, reaches retarded and brilliant students alike, and requires no special equipment. "You can lean back, relax, listen to music, and learn without effort and without realizing it. The possibilities of using suggestopedia on a mass scale are very promising." At the Bulgarian Institute of Suggestology and Parapsychology, records of controlled tests reveal that hundreds of people from all levels of society learned entire two-year language courses in as little as twenty (20) days. Small experimental groups mastered courses in basic mathematics, physics, chemistry and biology in a matter of weeks! It is not hypnosis or sleep learning. It is far more practical than that. The student is fully awake and in complete control of himself, say Dr. Lazanov. It is a kind of mind contact between teacher and student, based on Yoga technique of relaxation known as Savasanna. Using suggestion and auto-suggestion, muscle tension is relaxed and the brain is relieved of the usual activities and stresses. In this relaxed free state of consciousness or meditative state, fatigue quickly vanishes. Freed from all distractions which hamper its functioning, the brain resembles a sponge able to absorb knowledge of all kinds. The secret of this technique is that material does not reach the memory in the ordinary way, because the student does not participate consciously in the process [10]. Once the mind is opened in this reverie-like state, Lazanov found that the capacity to remember seems almost boundless---there is no apparent cutoff point. It is as easy to remember one hundred words than fifty [6]!

Like Dr. Lazanov, Dr. Lozano Caycedo, also a medical doctor, at the University of Madrid, investigated techniques that permit a person to modify states of consciousness and thus act on the body/mind linkage. Founding the Centre of Sophrology in 1960 in Barcelona, he initially used sophrology medically in many areas, including gastroenterology, psychiatry, and obstetrics. Caycedo says. "We teach people how to breathe properly, how to anesthetize themselves and how to relax. We reinforce in a person his capacity to take charge, and thus his capacity for hope." From medicine, Sophrology moved to sports and education, where Caycedo observed that people developed hypermesia--or supermemory—through Japanese Zen (which he considers a "perfection of Raja Yoga") and his own "dynamic relaxation" technique. Caycedo's system also used visualization exercises to achieve synchronization of body/mind rhythms, and sounds—not an orchestra like Lazanov—but by the human voice. Left brain and right brain are stimulated globally by having the course material read almost in a singing way with special rhythms and intonation. This technique he calls terpnos logos, and it goes back to the ancient Greeks. [Plato described it as a special tone of voice---a soft, soothing, monotonous, melodious tone somewhat like an incantation.] Sophrology teachers are even given voice coaching along the lines of an actor or singer [3]." Like Lazanov's Suggestology, Caycedo's Sophrology brings not only learning, but therapeutic spin-off benefits--- improved self-confidence, improved creativity, improved emotional development and self-expression, and freedom of limited ideas about capabilities. And Dr. Miller has demonstrated that we can control not only our minds and skeletal muscles, but also the so-called involuntary processes as well.

SUMMARY

The paramount goal of all science has been summed up as the Law of Parsimony, known to philosophers of science as Ockham's razor---Account for the greatest number of facts with the fewest assumptions! Learning theory sets down in one gift wrapped package some of the regularities of behavior that experimental psychologists have observed in their brain and cognitive research laboratories over the years. And now, the current developments of the learning-brain must be integrated into the information age. "Like the laws of physics, the laws of learning can be expressed in either prescriptive or statistical semantics, or languages, and they can be useful in comprehending situations far removed from the original laboratory context [5]."

The ethical and societal consequences of creative educational techniques must be considered in this innovative context---in terms of paradigmatic cycles, cultural timing, appropriateness of the traditional organizational structure of Academia, Wave-3 goals of our transformational society in terms of current/future needs, and how to differentiate between beliefs and knowledge.

Navigating both techniques through the Scylla and Charybdis of differing assumptions, we need to leap into bold new ideas and case methods that can work in education today. For example, Union High School (Sacramento, California) uses biofeedback gadgetry to reduce student stress, and link up the conscious with the sub-conscious. Both technique-types presented, enlighten the learning atmosphere and environment---helping to reduce the stress of mathematics and other anxieties. The serendipitous benefit is that both the simulation concept and the suggestology approach can be used in all educational disciplines, as well as in medical protocols, sports and engineering---providing needed, rapid meta-learning techniques for the accelerating 21st Century venues.

For our inevitable Wave-3 civilization---a workable and humane future, "the most basic raw material of all—and one that can never be exhausted—is information, includ-ing imagination. With information becoming more important than ever before, Wave-3 will restructure education, redefine scientific research and, above all, reorganize the media of communication [12]."

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APPENDIX A
SELMAN'S M-E-D-I-C-A-S-A MODEL

The **MEDICASA** Model is most effective for providing the necessary insights for further inventiveness, creativity and inter-disciplinary usage, focusing on the development of learning aids for specific applications, for preparing instructional goals and educational objectives [10].

NOTE: Abacus-type counters and Quincunx are demonstrated for concept integration, simulating Statistical Control Limits, within which range defective (wrappers) fall.

- Measurement: This Quality Control Dilemma has students using micrometer calipers to measure thickness of foil-wrapped and computing the Average, the Standard Deviation and the Distribution.
- Efficacy: This is the degree of higher-level integration of the unique concepts into the memory convolutions of the total brain.
- Data Development: Students plot data points for statistical control limits for samples of, say, five, and for the total expected mean and dispersion---the Standard Deviation.
- Imagery & Integration: Three-dimensional learning aids are integrated into the learning process for enhanced visualization and future retention.
- Computerization: Measured data, as well as estimated values are fed into a graphical software package [1] for plotting statistical control limits and [2] into simulation algorithms.
- Analysis: Comparisons are made of computer outputs with hand-estimations. For clarification, students perform data evaluation, forecasts, caveats, rationales for disparities---in a dynamic format.
- Sensitivity: Using simulation techniques, "what if?" questions are raised regarding basics.
- Applicability: Radiational aspects of lessons learned for application to other educational venues.

APPENDIX B
TYPICAL LESSON [FRENCH] USING SUGGESTOLOGY

In a typical classroom at the institute [suggestology & parapsychology], twelve people--students, house-wives, laborers, professionals, old and young--relax in reclining chairs that resemble airplane seats. The room looks more like a lounge than a classroom. The lighting is subdued to enhance the calming effect. T the group is listening to music, gentle soothing music. they look as if they were at a concert, completely wrapped up in the harmony of sounds.

Against the background of Brahms or Beethoven, the voice of the teacher seems somewhat businesslike, or if ordering work to be done, sometimes soft and calming, then unexpectedly hard, commanding. Her voice repeats in a special rhythm, on a special scale of intonation, french word, idioms, and their translation. But the students are not really listening. They have been warned not to pay attention, not to think about whether they hear the teacher. Relax. Do not think about anything. Their conscious minds are to be totally occupied by the music.

The next day surprised students discover that even though they we sure they had learned nothing, they remember and can easily read, write and speak from 120 to 150 new words absorbed during the two-hour session.

In the same way the toughest part of the language course, the grammar rules, painlessly take root in the minds of music-lulled students. Within a month students with no prior knowledge of a language have accepted two to three thousand vocabulary words and have a good grasp of the grammar. Longitudinal tests a year later show they still know all the material learned in this incredibly effortless way [6].

Classes run four hours a day: two hours for the suggestion session, one hour for the practice and tests, one hour for new material. Students come six days a week for three months. At the end of that time they have the equivalent of a two- or three-year course, a 6,000-word vocabulary, and a complete grasp of grammar. They can read, write and speak fluently.

[Tests a year later show students retain almost all they learned in the course!]

TEACHERS CHALLENGES IN DEVELOPING EDUCATIONAL COMPUTER SIMULATIONS

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Abstract

In this paper we describe an evaluation study integrated in a teacher in-service training course on modeling and simulation that had been held last year at the University of Coimbra. The main objective of the study was to determine whether teachers have or have not the ease and the time for developing or adapting their own models and simulations for use with their students in learning contexts given access to the proper tools. Other objectives were to access the adequacy of the tools used and whether they have acquired during the course the required skills and knowledge to do so.

INTRODUCTION

This study took place at the Informatics Engineering Department of the University of Coimbra, in a teacher in-service training course and it considered essentially the time and effort needed to design and develop a model and a simulation computer program in an educational context.

The course was entitled "Introduction to Modeling and Simulation Applied to Education", is twenty five hours long, distributed between ten hours of lectures and fifteen of laboratory practice with assignments. The target population is secondary level science teachers.

The course has two main parts. One is devoted to modeling (fifteen hours), where the notion of model is introduced along with the more common types of models, strategies and tools for their development. The other is on simulation applied to education (ten hours), where the notion of simulation program and techniques and tools for their development are presented.

The motivation for such a course emerged from a series of reasons. One is the widespread use of modeling and simulation in education. Another one relates to the known advantages of these techniques, such as the development of problem-solving and other high order cognitive skills and the promotion of knowledge transfer [Kang, 1995]. On the other hand, teachers lack usually the basic knowledge and skills to develop this kind of materials when they can not find one that suits their needs and the task by itself it is not considered to be an easy one.

THE CASE-STUDY

The study was conducted at the end of the course, after the trainees had acquired some experience in model and simulation design and development using currently available tools, like STELLA [STELLA, 1998].

The study involved two parts - a first one about the development of a model for a modeling activity and a second one about the development of a modeling activity or a quasi-simulation activity. However in this paper we will limit ourselves to the aspects related to this last one. Before we go any further lets clarify what we mean by these types of activities.

MODELING, QUASI-SIMULATION AND SIMULATION ACTIVITIES

Simulation models have been used in learning for years with different approaches. One is to build and/or use a model. Another is to use a special type of computer program that includes a model, usually hidden, what is called a simulation program. However we think other forms are possible. So in our view we distinguish between models, simulations and quasi-simulations and related activities.

By a modeling activity we understand the development, adaptation or exploration of a simulation model and its integration in a learning context. A model in this sense is considered to be a form of representation of a system that is usually simpler than the system itself [Law and Kelton, 1991]. Typical forms of system representations are mathematical equations, although others are also very common like discrete-event representations or qualitative models.

By a quasi-simulation activity we mean the development or adaptation of a quasi-simulation and its integration in the same type of contexts. A quasi-simulation can be seen as a model plus a scenario, where the scenario is another layer to put around the model and which main objective is to ease the communication with the model by clarifying model behavior, parameter input, etc.. A quasi-simulation can also be seen as something between a model and a simulation program or as a precursor or an alternative form of a simulation. In this paper we will focus on the development of quasi-simulations as a first step towards the development of simulation programs.

Finally, a simulation activity can be defined as an activity where a simulation program can be developed or adapted and integrated in an educational type of context. Besides the model and the scenario, a simulation includes also a learning layer which integrates essentially the learning strategy, additional information, the interaction, feedback and help [Marcelino et al., 1997].

THE POPULATION

One of the problems we faced with this evaluation study was that the group was quite small (only four teachers). Three of them had ages in the 40s and one in the 30s, so most of them had already got some experience as teachers. Two were women and two were men. All of them were from different schools and they only met during the course. Two were from physics, one from mathematics and the last one from economy. So the group was quite heterogeneous.

They had some experience of using computers, mainly by themselves. In the classroom with the pupils their experience was small. In this domain of modeling and simulation they knew very little. Yet their motivation for learning how was high as they classify themselves. We collected this information from a questionnaire we asked them to fill in at the beginning of the course.

THE TASK

The task was to specify, design, develop and integrate in an educational context at their will a modeling or quasi-simulation activity of their own choice too. So great autonomy was given. Our idea in so doing was to put them almost in the situation they would be facing when they finished the course.

To complete the task they had to start by identifying an area of learning, afterwards they had to select or develop a model they could easily use - we suggested them to select a model already developed and recommended them several books on the subject.

Then they have to implement the model and test it. To help them in this task we provided a modeling and simulation authoring tool that has been developed at the University of Coimbra - SIM-BEST (SIMulation: computer-Based Educational Support Tools) - and that has been presented to them during the course.

After they had to design and implement, using the same tools, a scenario for the model. Although freedom had been given for them to choose among a modeling or quasi-simulation activity, we encouraged them to select the quasi-simulation activity as the first one can be seen as part or integrated in this one.

The final item was to develop some materials to support the activity, but because the whole task was too lengthy and the time was short we decided to free them from this last aspect. In the appendix A we can see a version of the assignment that was presented to the teachers involved.

THE EVALUATION PROCEDURE

The trainees were divided into two groups of two elements each, according to their own choice.

The work of each group was followed by an evaluator that registered mainly the different steps in model and scenario design and development, help requests, hints given (sometimes it was necessary to give some guidance, although we tried to avoid it) and trainees comments.

We must say that it had been quite difficult to follow trainees work, because the task itself is not easy. We decided not to record too many items, otherwise it would have been very difficult to collect all the data. Anyway we managed to "measure" some parameters and arrived at some conclusions. In appendix A we can see some of the sheets that were prepared to register the data along with the sheets for the trainees. The sheets included refer to the first part of the task, the development and simulation of the model. For the second part, the development and construction of the scenario, similar sheets were designed, but as they are quite similar to these ones we decided not to include them.

THE TOOLS

SIM-BEST is an integrated authoring environment for the development of models, quasi-simulations and simulations that has an architecture inspired in the former conception of using models in education. It is composed of five editors, namely:

- the Educational Model Editor, EME, which is a modeling tool;
- the Educational Scenario Editor, ESE, a tool for building scenarios for simulation models;
- the Educational Instructional Editor, EIE, an editor for the construction of learning layers;
- the Educational Exploration Editor, EXE, a tool to aid the integration of external resources, like external data, remote information, etc., in a model, quasi-simulation or simulation;
- the Educational Evaluation Editor, EEE, a tool responsible for the inclusion of evaluation items in all these products.

At present we have running versions of EME and ESE, EIE and EEE are provided by the AIDA authoring environment, an authoring tool to assist the development of other types of educational computer programs like tutorials, drills, etc., and that has also been developed at the University of Coimbra, and an experimental version of EXE [Mendes, Marcelino and Mendes, 1998].

THE TRAINEES ACHIEVEMENTS

First Part - Development Of The Model

One of the groups, that we will call from now on group 1, chose an example from the area of tourism to explore the relation between the attractive power of a region and the quality of its environment. This model can form the basis of a learning activity to integrate in the area "school" which is an interdisciplinary area by excellence. For particular reasons, they opted to choose an example from neither of their areas of knowledge, respectively mathematics and physics.

This situation can be modeled by the following equations:

FIGURE 1 – TOURISM MODEL

$$\frac{dx}{dt} = - a * x + b * y$$

$$\frac{dy}{dt} = d * y * (1 - y / k) - c * x * y$$

Where x represents the number of tourists in the region, y the environment quality, a the tourist loss rate, b the advertising effect, c the environment degeneration rate, d the environment regeneration rate and k the carrying capacity [Bossel, 1994]. Basically the situation represented can be described in the following way: tourists are attracted by a particular region due to its environment quality and publicity. But their presence affects more or less this quality, diminishing the environment attractive power. However the environment has some capacity to regenerate itself and to establish some level of quality again.

The other group, that we will call group number 2, chose an example from the area of one of the elements, economy; the other was from physics. The case chosen illustrates the production cycle of a product and can be described by the model:

FIGURE 2 – PRODUCTION CYCLE MODEL

$$u = 1 + \text{pulse}\ (p, t, i)$$

$$\frac{dx}{dt} = a * (1 - y / g)$$

$$\frac{dy}{dt} = x - q * c * u * (y / g)$$

Where x is the production capacity of the product under study, y its inventory level, a the investment rate, g the inventory goal, q the sales, c the normal consumption rate, p the sales pulse, t the time of the sales pulse and i the sales pulse interval [Bossel, 1994]. This can be stated alternatively as: if the level of the product in stock y is low, prices tend to rise and also the investment in production. At the same time sales tend to decrease. This will lead to higher stocks, lowering of prices and consequently of production.

One thing we tried was that models of similar complexity were chosen for it would be much more difficult, maybe impossible, to withdraw valid conclusions otherwise. If we compare both models we realize that they are quite similar (number of variables used, structure, etc.).

Group 1 took one hour and a quarter and the other group took fifty minutes in this part of the task. We had foreseen one hour for it. So the results are not very far.

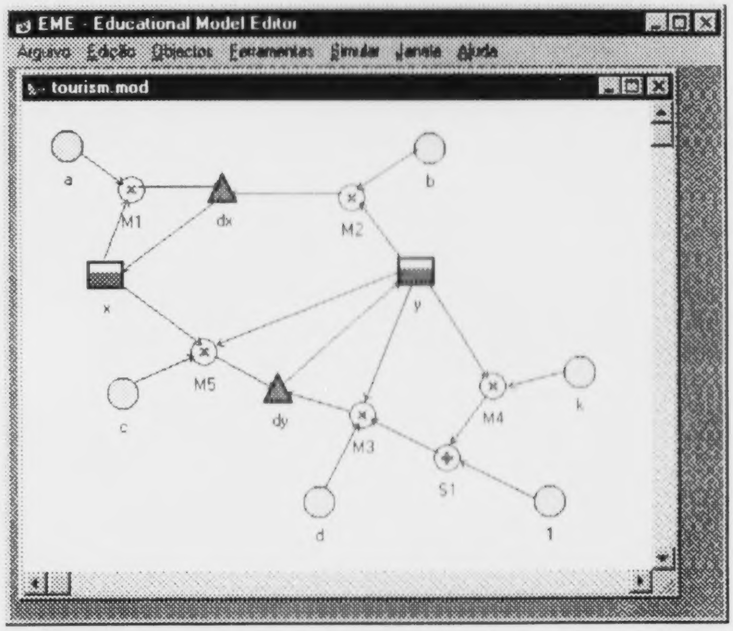
In Figures 3 and 4 we can observe the implementations of the models the two groups had done using SIM-BEST. In SIM-BEST models are described graphically. In a mathematical model each differentiated variable is symbolized by a tank, its derivative or rate of change by a triangle and the parameters and auxiliary variables by yellow circles. The circles with a + or with a x sign mean a summing, including subtraction, or multiplying, including division, relation between theirs input links. Arrows or links establish the relations between variables.

To implement the model group 1 started by identifying in the model equations the several elements of the model and their type. They got it right for almost every element. After they went to implement it in the tool. They did not try to develop it on paper. The model ran at the first try.

The other group however took a different approach. They started by developing a paper version of the model net, but right away jumped to the tool and proceeded developing on paper and in the tool simultaneously. The model ran at the second try.

During this process group 1 asked for help once and the evaluator had made a suggestion too. Group 2 asked for help three times and the evaluator had given two suggestions.

FIGURE 3 -TOURISM MODEL IN SIM-BEST, GROUP 1


EME - Educational Model Editor
Arquivo Edição Objectos Ferramentas Simular Janela Ajuda
tourism.mod
a
M1
dx
M2
b
x
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M5
c
dy
M3
M4
k
S1
d
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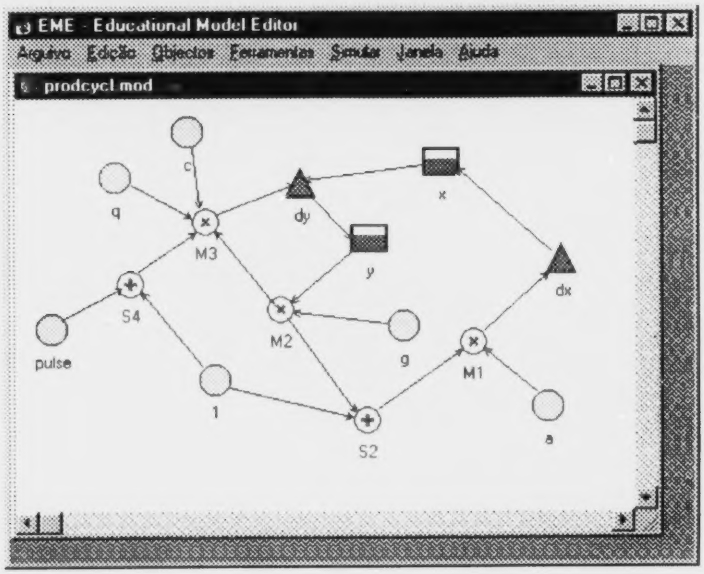
FIGURE 4 - PRODUCTION CYCLE MODEL IN SIM-BEST, GROUP 2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a

Second Part – Development Of The Scenario

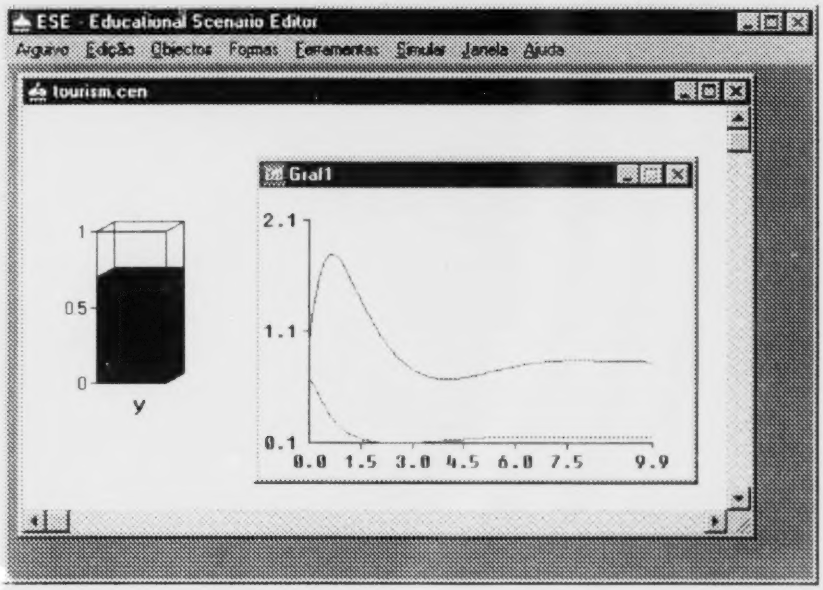
In this part of the task, the design and construction of the scenario for the chosen model, group 1 took twenty minutes and the second group fifteen minutes. We had foreseen thirty minutes for the second part of the task. Again the results are consistent with our prediction.

Group 1 started designing and implementing the scenario in the tool at the same time. They did not try to develop a version on paper. Group 2 started to sketch a scenario on paper, but decided also to go to the tool short after.

This difference in behavior, between the development of the model and the development of the scenario, suggests us that they have found this subtask conceptually more easy. This is perhaps because it is also more concrete.

As representation forms the first group chose a graph and a meter to represent respectively the number of tourists, x, and the environment quality, y. We can observe it in Figure 5.

FIGURE 5 - TOURISM SCENARIO IN SIM-BEST, GROUP 1


ESE - Educational Scenario Editor
Arquivo
Edição
Objectos
Formas
Ferramentas
Simular
Janela
Ajuda
tourism.cen
Graf1
1
0.5
0
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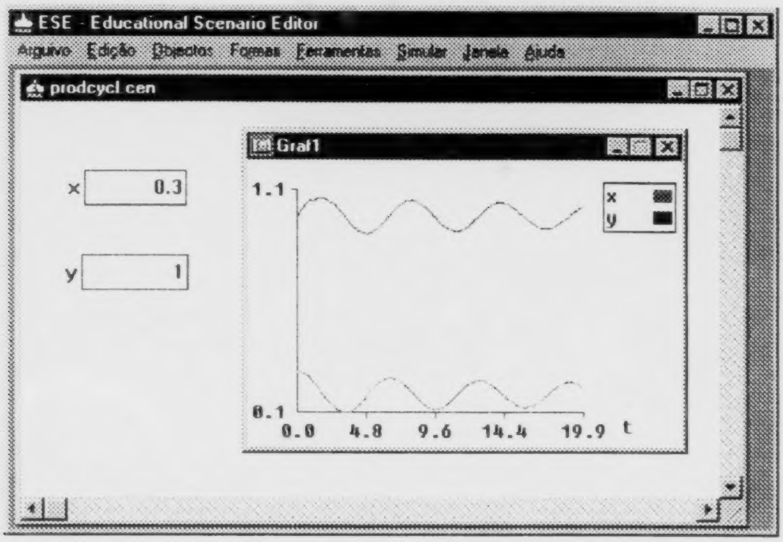
2.1
1.1
0.1
0.0
1.5
3.0
4.5
6.0
7.5
9.9

The second group only included a graph and two value-boxes to visualize the production capacity, x, and the inventory level, y (see next figure).

FIGURE 6 - PRODUCTION CYCLE SCENARIO IN SIM-BEST, GROUP 2


ESE - Educational Scenario Editor
Arquivo Edição Objectos Formas Ferramentas Simular Janela Ajuda
prodcycl.cen
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9.6
14.4
19.9
t
x
y

x 0.3

y 1

It is interesting to note that both group chose to represent in the scenario the variables of interest and that they both had clearly the notion that these were the most important variables in both models, which means they had understand the models adequately.

However in what concerns representation forms, group 1 could have chosen an animation (for showing the variations in the number of tourists that visit a region), but we recognize that they had not been sufficiently exposed to these tools to natural choose such a kind of representation form. For group 2 we think it was more difficult to choose other representation forms due to the nature of the context - as it was an economical model they chose the usual form, the graph.

Some Remarks On The Assignment

Generally we assisted the trainees improving their performance during the tasks. For example, they progressively were asking fewer help, feeling more confident (using less paper work and more computer time) and at ease (making more comments) as they progressed through them.

However we and them also felt that more time and more training were needed to attain a desirable level of proficiency. When asked about how they feel about the improvement of their level of knowledge in this domain they classify themselves at only a little better than at the beginning of the course. At the same time they felt poorly prepared and with little confidence to use these activities in the classroom. Yet they mentioned that the course had met their expectations.

CONCLUSIONS

The main conclusions we have to withdraw with this study are that these activities seem interesting to teachers and have potential for educational use, but for that to be possible it requires a lot of accompanying training. This is not a new idea. This study only came to reinforce some of the believes of the practitioners of the field [Merrill et al., 1996].

Other conclusions we took were about the tools used. We were at the same time evaluating their educational potential and we realized that these teachers found them relatively easy to use and we also perceived that they can speed up significantly the implementation process as a model and a scenario can be built or modified in a few minutes. Yet more studies are necessary including with the other editors of SIM-BEST.

About the course we can say that it has been to us a first step in this area of model building and simulation training, but it proved to be insufficient. We are already working on an extended version that we plan to start this year.

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APPENDIX A

INTRODUCTION TO MODELING AND SIMULATION APPLIED TO EDUCATION
ASSIGNMENT N. 2

DESIGN, DEVELOPMENT AND INTEGRATION IN A LEARNING CONTEXT OF A MODELING / QUASI-SIMULATION ACTIVITY

The main objective of this assignment is that you specify, design and develop the materials for a modeling or quasi-simulation activity for a learning context of your choice using the SIM-BEST environment as an authoring tool to assist you in the development process.

So, please start by:

a) deciding what type of activity (modeling / quasi-simulation) you are going to choose and why.

b) Make a first specification of this activity.

c) Now you can move to the design phase. It involves the development or the choice of a valid model to represent the situation under study (in the case of both a modeling or quasi-simulation activity) and also the design and development of a scenario to involve the model (in the case of a quasi-simulation activity).

d) Using the SIM-BEST environment build the model and the scenario (in the case of a quasi-simulation activity) you had designed and analyze its behavior. If you feel necessary, revise your model and/or your scenario.

e) Specify and design some accompanying materials that you think are necessary to support the utilization of this activity (for the student as well as for the teacher). In case you do not think they are needed justify.

ASSIGNMENT N. 2 – MODEL DEVELOPMENT

Version n. ___

Version n. ___

Page n. ___

ASSIGNMENT N. 2 – MODEL DEVELOPMENT

Time: ______

Version n. ______	
Help Asked	*Help Given*
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Page n. ___

ASSIGNMENT N. 2 –MODEL SIMULATION

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CHAPTER FIVE

THE VIRTUAL CASE - NEW POSSIBILITIES FOR ACTIVE LEARNING?

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Abstract

This paper reports on a project dealing with the very promising, but sometimes cumbersome task of introducing virtual cases at the Department of Political Science. A unique opportunity was presented to the Department to link the internal educational development of the case method with the multinational ELVIL project. Bridging the gap between these two projects has meant access to resources and know how, but also to restrictions. A series of virtual cases has been produced as a result of this cooperation. The next phase was to design a strategy for the development of virtual cases. One such pilot test is presented in this paper and in the appendix the first example of the case design - "Bruce Babbit and the oil in Alaska" - is demonstrated.

INTRODUCTION

The pedagogic advantages of the Internet and the case method have much in common: interactive problem-solving experience, a sense of learning beyond the classroom, learning the art of handling superfluous information, and skills for creating order out of nebulous information, providing more than one path to more than one possible solution. But the integration of IT in case teaching does not guarantee that you expand the qualities of problem-based and interactive learning. There are many examples of the opposite, i.e. the integration of IT has meant an adjustment to perceived technical restrictions, and the cases have often the character of step-by-step programmed learning. Boxes crammed with facts, "trails" for further information, and dashing illustrations can not conceal the programmed path towards a predetermined goal. And that can take us far from open and searching case pedagogy.

THE INTEGRATION OF IT IN CASE TEACHING

In the mid -1990s it became increasingly obvious that information technology presented attractive pedagogic possibilities to undergraduate students in political science at Stockholm University. References collected from the internet became more and more frequent in student essays. In connection with certain lectures, we have occasionally mentioned addresses on the Web. And from time to time case seminars made use of the WWW to update and supplement the case study material. These are just a few examples. But our discussions and various attempts were rather spontaneous and disjointed.

The students have expressed a strong interest in getting more opportunities to make better use of IT. This applies especially to students aiming at future teacher positions in Civics in secondary education. The Swedish Government has very clearly stated, for example in the budget proposals of 1996 and 1997, that future teachers must deal with and accommodate IT as an integrated aspect of the curriculum. This is, of course, an objective just as valid for other students in political science with regard to their future professional lives.

A unique opportunity to attain a real breakthrough in integrating IT was presented to the Department of Political Science in 1996. Since September of that year the Department has been taking part in a project called ELVIL (*The European Legislative Virtual Library*) funded mainly by the European Union. The objective is far-reaching and ambitious. ELVIL will develop an Internet-based tool for search, selection and presentation of information on European law and politics. ELVIL will offer a "virtual library" and "the user can virtually enter the corridors of political Europe" (according to the technical annex of ELVIL). The intended users consist of graduate and undergraduate students, teachers, librarians, the media, and the general public. This application will increase the availability of information by supplying a point-and-click graphical interface for a wide range of legislative computer based resources. (*http://elvil.sub.su.se*).

The Department of Political Science is directly involved in the second part of the ELVIL project aiming at developing a multimedia educational tool for students of European law and politics, teachers and librarians. The project will provide the Department with knowledge about how to build and develop a multinational information system. The ELVIL project will establish the Department as a partner in a European network, consisting of both technical knowledge and practical pedagogical experience. The legislative and political element is central to the ELVIL project, but it does not include any pedagogic/educational application for the academic home environment, i.e. our own department and ways of developing our courses in an educational sense.

THE DEVELOPMENT PROJECT AT THE DEPARTMENT

The Swedish Council for the Renewal of Undergraduate Education has funded a two year project (Sept. 1997 - Sept. 1999) at the Department of Political Science at Stockholm University. The primary aim of this project is to adopt a more comprehensive approach to the integration of IT in teaching political science. One of the basic ideas is to bridge the gap between the multinational ELVIL project and the educational planning of specific courses at the Department of Political Science in Stockholm, and to use the expertise and information resources that ELVIL offers in order to fully utilize its pedagogic potential.

A very important aim of the project at the Department is to further develop the case method as a special kind of problem-based learning (PBL). This means a further development of the case method which has already been established. The Department of Political Science has rather extensive experience of the case method starting in the mid-1980s. But there is a lack of teaching-tools suitable for PBL and the case method. The ELVIL project is developing pedagogical interfaces using the latest techniques within virtual reality and multimedia. The user will have easy access to public information on both a national and pan-European level. All this can substantially facilitate the problem-oriented teaching and contribute to making new kinds of material accessible.

Two parts of the basic course, Swedish politics and public administration, and Comparative politics, and one part of the intermediate Essay writing course, have been the foci in the development at the Department of Political Science. Important parts of the undergraduate courses in political science as well as in Civics (in Swedish: *Samhällskunskap*) are thus covered by the project plan. The authors of this paper to the WACRA conference, Reidar Larsson and Yngve Myrman, are two of the participants in this project.

Bridging The Gap

Bridging the gap between ELVIL and the development project at the Department has launched activities very much influenced by the different target groups for the two projects. The intention behind the ELVIL project is to create a virtual tool for the citizens in Europe to facilitate the access to European databases in law and politics. ELVIL has the ambition, among other things, to function as a school in Civics for Europeans. So far, a series of basic lectures on the political process has been produced at the Department, comprising the process from initiative to decision and implementation. The lectures are strictly structured to permit the concentrated design of an easy introduction, which is also useful as self-instructional material in elementary courses at the university.

So far (January 99) twelve different cases have been linked to the lectures and ten of the cases have been translated into English. The cases are written by different authors connected with the Department. The cases are published on the Web and the titles of the translated cases are: *Donor card*, *Criminalising sex*, *Minority rights*, *Only Sweden has Swedish trucks*, *New environmental law*, *Don't bug* *me, Child pornography, Mad cows, The wage management case, Belgian Blues.* Still to be translated are *The Climate Convention in Rio,* and *The European Convention on Human Rights.* (*http://elvil.sub.su.se/data1/home/home.html*).

These virtual cases provide an inside view of a number of real legislative processes. They are based on documentation retrieved from the Virtual Library of ELVIL and written with a touch of fiction. To provide the "real-life" illustration of the political and administrative process, and to give an "everyday approach", some of the actors are invented and the dialogue is largely fictitious. The cases - with different degrees of difficulty - present the political system from a concrete first-person perspective, but also from a more general third-person angle. The user can investigate a real legislation issue, and get a virtual tour that follows the legislative process from problem/idea to a new law. To support the virtual cases there is - as a part of the package - a series of virtual seminars to provide a set of questions that will form a starting point for discussions.

All these cases are largely step-by-step-programmed-learning that obviously can support undergraduate education. At the Department we have tried to integrate the above cases with the student assignments in some of the basic courses. Some examples:

- Start by reading the *New environmental law* case. What can we learn from the *Öresund Bridge Case*? Explore further the "iron triangle problem".
- The Mad cow disease. Compare the agenda setting and the implementation process in Sweden. Start by reading *Mad cows*. What can be said about problem framing and learning? Information management? The role of the media?
- Read the *Donor Card* case. What was the role of the political parties in this case? What role did lobby groups and special-interest organisations play?
- Minority rights in Sweden. Read the *Minority Rights* case, on the Sami rights in Sweden. What could a minority reasonably be guaranteed access to - its language, its traditional lifestyle and livelihood, or the land of its ancestors?

The questions in the four examples, collected from the series of virtual seminars, all focus on key problems. There is a clear tendency to turn to general findings and not to dig deep into the specific situation, thus obtaining bewildering insights into political life. One additional problem is the fact that the legalistic views of the participating parliaments (so far Great Britain, Spain, Sweden, and the EU) dominate the databases in the ELVIL network. In a way this is satisfactory if you want to add something to the preliminary discussion. But the adjustment to real and perceived restrictions (intentions within the ELVIL project, target groups etc), and the the step-by-step character of the cases, has meant that a high proportion of the dynamics of the problem based encounter between the case method and the resources on the Web is lost.

To create essential cornerstones in academic teaching, formulas are required that permit more independent and research-oriented strategies, in tune with the mainstream case method. We need to find strategies that brings us closer to the actual decision maker, not a fictitious player. We need to come closer to the organisation, the informal process, and the documents which describe the rather complicated outcome of it all. We have tried to build on one initial experience to tackle some of the potentials involved in the integration of IT into case teaching. During the current academic year (98/99) we have produced additional virtual cases to cope with the implications of what we call Discovery Based Learning. This will contribute not only to case development at the Department of Political Science, but also to the ELVIL project.

DISCOVERY BASED LEARNING

The development project at the Department is based on a solid belief in "discovery-based learning". The central and ever present pedagogic problem is to involve students with current material that tests their assumptions and knowledge. The internet allows students to explore background issues and make new links between different kinds of information. The process of searching for this information forces students to ask new kinds of questions about the issues studied that are not motivated by the review of just a single text. The problem and discovery-based learning mean that the students are forced to sort out the full implications and importance of competing perspectives.

By facilitating the application of theoretical understanding the case method helps students to develop their analytical abilities. The internet is a particularly useful tool for case learning. Internet based case learning facilitates enhanced cooperative learning and improved student teacher and student interaction.

The pedagogic advantages of the Internet and the case method have much in common: interactive problem-solving experience, a sense of learning beyond the classroom, learning the art of handling superfluous information, and skills for achieving order out of nebulous information are acquired, providing more than one path to more than one possible solution. All these qualities are parts of the Discovery Based Learning process for the application of theory.

Textbooks, like all written materials, tend to become out-of-date or even obsolete, whereas materials on the internet may be continually updated. WWW resources include up-to-date documents not available in libraries, but there are obvious barriers for the uncovering of information: secrecy, misinformation, overload, and inefficiency. It is absolutely necessary to discuss all these realities, and it is, of course, essential to research how to get the best out of the new technology available, both for students writing papers, through the WWW, and for teachers seeking to present their materials (for instance cases) more directly and efficiently.

The ELVIL project will gradually facilitate access to different kinds of sources: news and updates, references, reports, newsletters, government documents, laws and regulations, parliamentary information, organization information, statistics etc. In the next phase of the ELVIL project, starting in 1999, the group of participating countries will be extended to include additional EU countries. This obviously contributes to the optimistic outlook in this paper.

A Strategy for Case Development

The ambition is to adopt a more comprehensive and ambitious approach and to design a strategy for case development. Integrating IT means a range of different balance points for the student-teacher relationship. Sometimes the teacher merely presents the starting points for the analysis, sometimes a complete multimedia case can be presented. The variations are innumerable. The students will be offered resources for independent research and teachers will get resources to produce relevant and up-to-date cases adapted to the specific course. We envisage three different types of cases suitable for the initial development work. The general intention is to give the student varied possibilities to embark on a more profound analysis and to achieve a deeper understanding.

The *first* type of case presents a comprehensive picture from beginning to end and students are asked to deliver an *ex post* analysis (i.e. the analysis is retrospective). The approach is actor oriented and the case is presented from one or two different positions and views. The case consists of an introductory overview and a range of references to databases. A set of questions may direct the analysis: What is the problem? What is the dilemma? Which background factors influence the formulation of the decision? What are the prerequisites for the implementation? How do you characterize the implementation? What criteria should be used in an evaluation?

The *second* type will give a more detailed account of the process from the initial stage up to the decision point. The reader gets instructions as to how to find additional facts from ELVIL. Some theoretical starting-points for the analysis are presented. The questions in the first type of case can be used with two exceptions: the two final questions may be replaced by the following: What are the solutions? How do different theoretical approaches influence your assessment of the implementation to come? How do you evaluate the decision process?

The *third* type of cases will be a very brief version which only presents the background to a problem. The reader is invited to identify the problem and also to consider possible solutions. The case will include instructions on how to find information which is to be used in the further analysis. The position of the reader will be ex ante, i.e. the analysis is future oriented.

In the following section of this paper we will present an example of a recently written case that corresponds mainly to the first type, the account beyond the decision point. The U.S. Secretary of the Interior, Bruce Babbit, is the leading actor in the case we tested in the basic course in Civics during the autumn term of 1998.

THE PILOT TEST IN CIVICS

We mentioned earlier in this paper that students in Civics, in particular, have expressed a strong interest in opportunities to make better use of IT. This was one of the reasons why we selected part of the basic course in Civics, *Swedish and Comparative Politics*, as the "test area". This course gives an introduction to central concepts and methods in comparative studies, presents the fundamental principles of different political systems, and gives an overview of important institutions, regulations, and the decision-making and implementation processes. The corresponding subject fields can be found in the basic course in political science where they constitute a substantial component (10 credits out of 20). This was, of course, another reason for the placement of the "pilot test". It would be rather easy to further disseminate the results.

The teachers already had some experience of using cases in this course and the integration of IT would considerably strengthen the chances for students and teachers to retrieve information adding considerable value to case discussions. The student group in Civics consisted of five parallel groups, in all 110 students, of whom the overwhelming majority represented three different teacher training programs. The course was taught in October - December 1998.

THE BRUCE BABBIT CASE

The basic idea for the case design is pretty simple. A short summary of the story is presented in the case and you meet the leading actor(s), get an idea of the situation and the dilemma (*See Appendix*). But the case in itself is just an introductory gate to information that can be found on the Web. Throughout the case you can find Web addresses, and you can click on to get the necessary information for your own analysis. Sometimes the Web address contains just a single document, but sometimes you are presented with a site somewhere, facing a great many priority problems in an analytical situation that can be very demanding

For many years, we have used a paper-based case about the "Exxon Valdez" accident in 1989. The interest in the U.S. Secretary Bruce Babbit and his Alaskan oil dilemma is to a large extent a spin-off from "Exxon Valdez". When we, the authors of this paper, investigated all the sources we could find on the Web, it was easy to see the potential for a good problem-oriented case[1]. The *Bruce Babbit and the oil in Alaska* case gives rather deep insight in specific political issues. It presents a dilemma first of all from the federal position of Bruce Babbit, but also from the state level in Alaska and the local interests of the first nation. The basic idea behind the case is the analysis of a federalsystem, an important part of the syllabus. The Web address for the case is: *http://www.statsvet.su.se/version%203.0/Arkiv/Publikationer/Case/Bruce%20Babbit.html*

EVALUATION OF THE CASE

On average, our students worked for seven hours to prepare for the seminar on Secretary Bruce Babbit. Of this time, more than three hours on the average was spent at the computer. *Diagram 1* shows some unexpected differences between students. Those having "some" or "fairly wide" experience with IT spent more time, both at the computer and on preparing for the seminar, than those (few) who had "no" previous experience and those with a "wide" experience. It seems quite normal that those with wide experience should spend less time at the computer, and consequently less total time preparing for the seminar. On the other hand, those with no previous experience would be expected to need extra time at the computer. One reasonable explanation is that those without any previous experience were less motivated to explore all aspects of the case.

This hypothesis is corroborated by the data from the two middle groups - provided there is a correlation between interest in exploring the case and the number of hours spent at the computer. Another clear corroboration comes in our next diagram. The overall assessment of the case is significantly lower in the group without any previous IT experience.

As we can see in *Diagram 2,* the overall assessment by the students was well above 3.0, which in our questionnaire was the equivalent of "good". (The highest grade was 4, indicating "very good".) Thus, the only group with a less positive view of our virtual case study comprised students with no previous experience of the internet. Since this group was very small in our seminars (only 7 persons) and can be expected to dwindle even more in the near future, we do not regard their more negative assessment as an obstacle to the further development of virtual cases.

DIAGRAM 1
HOURS OF WORK - BY PREVIOUS IT EXPERIENCE

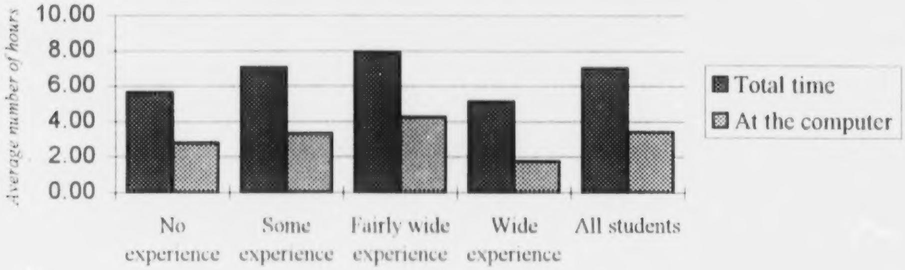
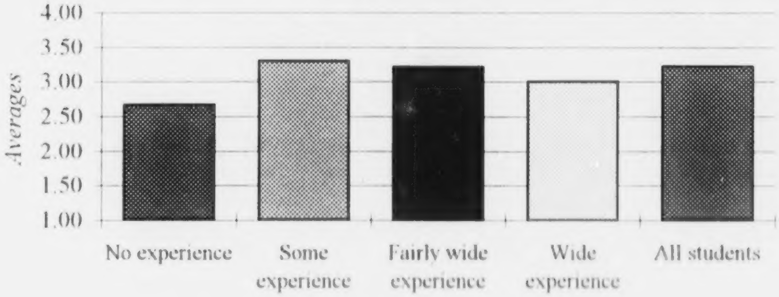


DIAGRAM 2
OVERALL ASSESSMENT - BY PREVIOUS IT EXPERIENCE

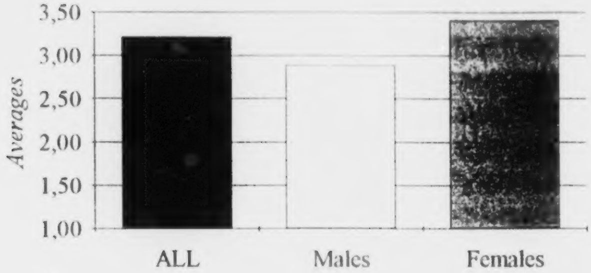


Scale: 1-4

The "gender factor" in information technology has been much discussed in recent years. Some have been quick to denounce computers and IT as "boys' toys". Our experience is rather the opposite. As can be seen from *Diagram 3* our female students had a more positive attitude to the Bruce Babbit case than the male students. However, we cannot be completely sure that the more positive judgements by the female students actually mirror a more positive attitude to the internet and IT. It could also be a reflection of a more positive overall attitude to cases as a pedagogic form. At least, this is what we have noticed in our own course assessments in recent years. The female students also gave higher marks to the "learning effect" of the Babbit case and were clearly more positive to the relevance of this part of the course to their future work as teachers.

We think these are important issues that should not be overlooked. We invite our colleagues in other countries to share their experiences with us.

DIAGRAM 3
OVERALL ASSESSMENT – MALES & FEMALES



Scale: 1-4

CONCLUSIONS

The growth of the WWW is opening up specific new opportunities for case teaching and learning. Above all we can develop the discovering aspect of learning which, unfortunately, is overlooked in much of to-day's streamlined case writing. Even in otherwise well designed cases, we can see that the hidden curriculum of programmed teaching is slipping in through the back door. On the practical side we think there are at least three arguments to support our point.

Firstly, there are now sufficient materials on the WWW that can be used for "virtual" cases, at least in such areas as politics and business. Private companies, government departments, political parties, individual politicians, voluntary non-governmental organisations, lobbying groups, etc. are all very active on the Web. In other words, the participants on the WWW are the same kind of actors most often used in case studies. Background materials about the political systems and current political issues in individual countries around the world are particularly abundant. Many of these materials are collected and published on the WWW by university departments, research institutes, and scholarly journals. We expect such institutions to apply normal qualitative criteria in their selection of materials. This gives us some initial assurance about the quality of background facts often required in a case study.[2] In general, the strong side of the WWW is facts and documentation, but not analysis. For our purposes, this is more of a benefit than a drawback since analysis is the precise feature that the students are expected to provide.

Secondly, at least an elementary experience of using the internet is fairly widespread among students. In our test group of 110 students there were only seven who did not have any previous IT experience. Consequently, almost 90 per cent of our student group did not bother to attend our short introduction for beginners. Furthermore, 80 of the 110 students had access to the internet from a computer in their own place of residence. These figures indicate that the need for expensive computer rooms at university departments is dwindling very fast. During the next few years we can expect students to do computer-based course assignments either at home or in public libraries. This means that one important practical restraint for using "virtual" cases will be removed in the near future.

Our third supporting argument concerns such mundane items as time and money. Thanks to the WWW, it will be easier and take less time to develop cases on current issues e.g. in European and world politics. In political science courses it is possible to imagine a kind of *ad-hoc* cases on current problems that is replaced or changed from one term to another.

Needless to say, a WWW-based "virtual" case cannot be concocted in a single afternoon. Obviously, it requires careful research and good background knowledge on the part of the authors. However, we think that there is a substantial cost-saving in making use of the often abundant source materials that are available free of charge on the Internet.

Cost-savings aside, we would now like to turn to some important pedagogic benefits that are more or less unique for WWW-based cases.

A "virtual" case provides essential training in source critique for the students, in a way that is quite rare in conventional, ready-made cases. The students will have to use their judgement to weigh conflicting statements of fact and opinion in a controversial issue. There are no easily available clues on the WWW. In this respect, working with a "virtual" case can be compared to the training you get by writing an independent essay. This is important, especially in political controversies when conflicting interpretations of facts and figures are so frequent.

Closely related to this is training in sorting and sifting the source materials: What is essential in this case and what is not? Which facts, and which statements are necessary for my analysis? On the WWW, there is, in principle, no limit to the amount of materials that are available. In most cases, there is always another politician, or another NGO whose opinion could be important. Learning to sift, sieve and winnow, to get an overview of the essentials of a case is what much case learning is about. We think that the virtual cases give added value in this respect.[3]

A third aspect, which should at least be mentioned, is the opportunity for students to actually interact with participants in the case. On most websites there is an invitation to send comments or to ask questions by E-mail. Of course, this opportunity must be used very carefully and with judgement. Still, this at least potential interactivity is an interesting aspect for the future of case writing, or rather case composing. It can add to the dynamics of virtual cases in ways that are difficult to apprehend at this moment. Like the multimedia cases, which are using video-taped interviews with the actors, the "virtual" case brings the students in the case seminar closer to "real life". For example, oil drilling in Alaska (the issue in the Bruce Babbit case) was also an issue in the federal and state elections in 1998. Three of the acting persons in our case were up for re-election in November 1998, only a few days before our seminars.

A virtual case can also be dynamic in another sense. New materials are always added with time and no aspect of it can be "hidden" from the students. There is no way of preventing the students from making their own independent searches on the WWW, outside the limits of the assigned list. Even if a case focuses on a specific decision, as in our case with Secretary Bruce Babbit, the process in real life is continuing. There is no way that Secretary Babbit´s actual decision could be presented as a sequel, to be revealed towards the end of the case seminar.

It could very well be argued that we are losing, or reducing the dramatic effect which is often regarded as an important part of case writing. Letting the readers know the actual outcome could be compared to revealing the name of the murderer in the first chapter of a detective novel. We think, however, that the need for dramatic effects is somewhat exaggerated. For the purpose of analysis, the actual decision can equally well be used as the opening point for the seminar. At least, we did not notice any negative effects on the discussion in our test seminars.

A virtual case is also dynamic in a way that may be more problematic. After some time you will lose some of your references, i.e. the Web address cannot be located any longer, or it does not include the document you found there a few months ago. So far, we haven´t had that problem. But we strongly recommend a check-up routine as a part of your preparations before the seminar.

The Bruce Babbit case was part of a course in Comparative Politics. Its purpose was to give the students a better understanding of the complicated political system in the United States than can be obtained from a textbook. Our own view, as seminar leaders, is that the case served its purpose reasonably well. This was confirmed by our questionnaire, and in many individual comments by the participants. On the other hand, there is still much to be learned and some of the questions raised by our students must be taken seriously. One frequent question concerned the computer as a medium in itself: Why force students to spend many hours at the computer screen if the materials can be copied from the WWW into a booklet and sold in the university bookshop? After all, a course in Comparative Politics is not, or should not be, a course in Personal Computing.

These are reasonable questions and we should not exclude the possibility of producing printed versions, or versions on CD, of "virtual" cases. On the other hand, a case built directly on the WWW has some qualities that a printout or a CD-disc cannot fully provide. We have already mentioned some qualities that are important in all university education: The training in source critique, in delimiting the subject and sifting the materials. Also, a "real" virtual case brings the students even closer to real life. An additional argument concerns motivation and in our view it is a very important point. Everyone who has "surfed" on the WWW has experienced something of the thrill and joy of exploring new territories. If you believe in the case method as a form of "discovery based learning", as we do, we think that the virtual case should also be seen as a new tool to enhance active learning.

ENDNOTES

1. One such source was the Website *Arctic Circle* at the University of Connecticut *www.arcticcircle.uconn.edu*).
2. There are a number of directories for individual countries, political parties, elections etc. that are especially useful for Comparative Politics. We have compiled a "directory of directories" for our students which can be found on our department's home page, *www.statsvet.su.se*.
3. Some multimedia cases are also designed with this aspect in mind. At the KSG at Harvard, the students have access to the case computers for only a few hours, forcing them to develop a search strategy very quickly.

APPENDIX

STOCKHOLM UNIVERSITY
Department of Political Science

Bruce Babbit and the oil in Alaska
A case about politics in a federal system

Reidar Larsson and Yngve Myrman
October 1998

"Americans won't stand for it"
Bruce Babbit wanted to be quite clear and straightforward in his open letter from the U.S. Department of the Interior. He stated three things:
(1) the American people who own the Refuge don't stand to get much out of this deal;
(2) the political leaders of Alaska and industrial leaders who financed their campaigns would reap the biggest, most disproportionate windfall in recent history; and
(3) if they are prevented from working in the dark of night, kept from using Washington's Byzantine budget process to conceal their self-serving manipulations - if they're forced to come out in the daylight and explain themselves - it just won't happen because Americans won't stand for it." *(www.doi.gov/doibboc1.html)*.

This open letter was a follow-up to President Clinton's veto presented in December 1995 intended to stop the plans on oil development in the *Arctic National Wildlife Refuge* (ANWR) on the northern coast of Alaska. Senator Frank Murkowski, R-Alaska, immediately replied in an open letter discussing Babbit's argumentation. *(www.senate.gov/~murkowski/press/ANWRBabbitResponse.html)*.

Bruce Babbit had repeatedly underlined that every bill containing oil drilling in the Arctic areas in Alaska was unacceptable to the Clinton administration. Bruce Babbit was appointed Secretary of the Interior in January 1993 *(www.doi.gov/secretary/index.html)* and was regarded by many activists as one of the most environmentally conscious Interior Secretaries ever. *(www.doi.gov/doibboc2.html)*.

THE NORTHERN COAST OF ALASKA

For thousands of years, the Gwich'in Athabascan Indians have inhabited the vast coastal plain of northern Alaska, and the Inupiat Eskimos have lived along the North Slope. *(www.arcticpersp.org/*

ANWR/APanwrCul.html and *conbio.rice.edu/nae/docs/gwichin2.html* and *arcticcircle.uconn.edu/ANWR/asrcadams.html).*

The northern coast of Alaska at the Arctic Ocean is also the land of the reindeer and the migratory birds. The North American wild reindeer, the Porcupine Caribou, migrates in huge herds across the Arctic tundra. They have their calving grounds in the coastal plain. Here migratory birds from the entire North America and from the Asian Pacific coast have their breeding places as well. At the Canadian border there is a national refuge, *the Arctic National Wildlife Refuge. (www.r7.fws.gov/nwr/arctic/* and *www.anwr.org/* and *www.arcticpersp.org/ANWR/APanwrtoc.html)*. The United States has in international agreements (together with the Arctic nations, among others Sweden) committed itself to the cause of protecting the Arctic flora and fauna. (*www.arcticpersp.org/ANWR/APanwrAgree.html)*..

The northern coast of Alaska has very rich oil and natural gas resources. At Prudhoe Bay on the north coast, there is an oil field of national importance to the United States. It was established during the oil crisis in the 1970s through a separate decision by Congress in Washington, DC. The oil is transported through the Trans-Alaska Pipeline down to the oil terminal in Valdez and from there further on onboard southbound tankers. The biggest oil catastrophe hitherto in U.S. history occured in March 1989 in the waters outside Valdez.

At the northernmost point of Alaska, Point Barrow, there is another unique reserve. This area contains, since the 1920s, a "national oil reserve" intended to be used only in a crisis situation. The offical name is *the National Petroleum Reserve-Alaska*, NPR-A. *(www.mosquitonet.com/~ naec/npra/index.html)*. NPR-A is presently under the supervision of the U.S. Department of the Interior. *(www.doi.gov)*.

In 1997, the Alaskan oil fields supplied almost 25 percent of the domestic oil production. The Alaskan oil covered almost 10 percent of the U.S. consumption. When it comes to population, Alaska is the smallest state in the U.S. Around 85 percent of the State´s budget comes from oil revenues. For many years now, Alaskan inhabitants have been exempted from state tax. In order to give its citizens a share of the oil revenues, the State sends a cheque to every resident once a year (*www.revenue.state.ak.us/pfd*).

To survive and to develop, Alaska has to make use of its natural resources, Governor Tony Knowles (Dem.) says. *(www.gov.state.ak.us)*. Knowles has been Governor since 1994 and is standing for reelection in November 1998. He has campaigned vigorously to increase oil production in Alaska, especially as many believe that the present oil field at Prudhoe Bay may only have a limited lifespan. Alaska´s delegates to the US Congress, among them Senators Frank Murkowski (Rep.) and Ted Stevens (Rep.), have lobbied intensely in Washington, DC. (*www.akrepublicans.org*, *thomas.loc.gov/home/thomas2.html* and *www.senate.gov/home.html*).

A very active lobbying group, the *Arctic Power,* has been founded and is supported by the State*(www.anwr.org)*. Many environmental organisations are campaigning against further oil exploitation in Alaska. (*www.asrc.com/*, *www.mosquitonet.com/~ naec/* and *www.sierraclub.org/chapters/wa /wilderness/national/anwr.html) Greenpeace* has already stationed a ship, the *Arctic Sunrise,* outside the northern coast of Alaska. The organisations of various indigenous peoples have also taken stand, for and against oil drilling. (*www.arcticcircle.uconn.edu/ANWR/tanana.html*, www.arcticcircle.uconn.edu/*ANWR/anwrafn.html* and *majoritywhip.house.gov/dfiles/Enviro/anwr.htm*). Local opinion polls have been conducted (*www.anwr.org/people/people.htm*).

THE DECISION

In January 1997, President Bill Clinton instructed Secretary of the Interior Bruce Babbit to study the impact of further oil drilling in Alaska. Part of the background was a request from Governor Tony Knowles and the issue was if the oil reserves in the Alaskan petroleum reserve, the NPR-A, should be utilised or not (*www.adventurewest.com/e_news/npra/npra.htm*). The study was conducted by a special unit in the DOI, *the Bureau of Land Management* (BLM). Mr Babbit had been actively engaged in this issue. In 1997 he visited the Alaskan North coast acccompanied by Governor Knowles. He had met with the Gwich´in Indians and the Inupiat Eskimos. Of course, he also met with politicians, environmental groups and representatives of the oil companies (*www.gov.state.ak.us/npra.htm* and *www.mosquitonet.com/~*

naec/npra/nytimes/html).

The study was finished during the summer of 1998 and on August 6 Secretary Bruce Babbit announced his support for the conclusions of the BLM study. A proposal was presented that a smaller part of the NPR-A was to be opened for oil drilling (www.blm.gov/nhp/news/press/pr980806.html, www.mosquitonet.com/~naec/npra/newsrel2.html and *www.mosquitonet.com/~naec/npra/drillbits.html*).

On October 7, 1998, Secretary Bruce Babbit signed the decision. This was a balanced plan, he stated, and the BLM was now to draw up the guidelines for its implementation (*www.doi.gov/news/981007. html* and *www.gov.state.ak.us/local/gov/press/98264.html*).

The editing of this version of the case was completed October 10, 1998.

CASE STUDIES AS A TOOL FOR THE EXTERNALIZATION OF TACIT MANAGERIAL KNOWLEDGE

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Abstract

Case studies are used by the Knowledge Management Society (KMS) as a tool in promoting the dissemination of Knowledge management to other agents.

To begin with, case studies are used in teaching. Here the relationship between university and firm facilitates the externalization of tacit Knowledge. What is new is that these case studies relate to Basque firms, are mainly SMEs. This is an important point, since the managerial practice in question is described in its proper context. Moreover, the purpose of these case studies, from the point of view of the Knowledge Management Society, is to promote new Knowledge on the basis of the socialization, internalization, and combination of knowledge through such agents as consultancies, universities, and management-related institutions and other firms.

MANAGEMENT AND CONTEXT

Ideas about management need to be proved useful in practice. Managers and other professionals refer constantly to what works and what does not. The problem is less a scientific one than one of social acceptance. Social acceptance is a cultural phenomenon in which social agents must modify ideas for adaptation to the requirements of the local culture.

There is a system in which agents and institutions interact in this process. No one has control over management. Rather managers, politicians, and consultants are value creators, forming part of the national skill formation system [Mohr, 1982].

TABLE 1 - ADAPTED FROM MOHR (1982)

EXTERNAL FORCES

Economic and political circumstances

↓

NECESSARY CONDITIONS

Teachers in business administration
Politicians
Business groups

↓

INTERACTION

Interaction between the groups

↓

NEW KNOWLEDGE

This theory of social context would appear to run counter to globalization. One of the most important topics dealt with in the area of globalization is that of business knowledge, which has emerged in full force over the last few years. Here knowledge has grown exponentially, as can be seen in the literature regarding management structures and their various types.

The term globalization generally connotes a world that is becoming more uniform, one in which Western capitalism is imposing standardization on technological, commercial, and cultural phenomena. However, recent studies suggest that each region establishes its own characteristics. And this can indeed be seen in managerial practice. With Withley we assert that "management is more social- and context-dependent than other so-called sciences."

On the other hand there is a tendency, in transferring managerial Knowledge, to concentrate on the context at source rather than on the context within which the transfer will be received. Thus a lot of managerial Knowledge is concentrated within large firms. In large firms there is no problem in acquiring such Knowledge, while a mere reduction in scale may not be the way to adapt it to the needs of SMEs. For one thing the management of the smaller firm in industry is not necessarily less complex than that of the large one.

Newel, Robertson, and Swan have shown that the professional associations have a major role to play in the diffusion of Knowledge by providing a forum for the setting up of networks between organizations.

The Knowledge Management Society in the Basque Country is a network of universities, business schools, consultants, firms, agencies, and public bodies, engaged in producing and disseminating business Knowledge. In the era of post-bureaucratic organizations, knowledge theory has come to endorse change and creativity, and some consultants are developing products aimed at the diffusion of management Knowledge. In particular, Knowledge Management Society is concerned first with creation, adaptation, diffusion, and implementation, and secondly with the institutional conditions for the social acceptance of ideas in management. Knowledge and action, theory and practice follow one another.

The Knowledge Management Society is put into practice in accordance with the concept of the KNOWLEDGE MANAGEMENT VALUE CHAIN.

TABLE 2 - KNOWLEDGE MANAGEMENT VALUE CHAIN

	Creation	Adaptation	Dissemination	Action
	Creation	Adaptation	Diffusion	Action
Universities Business sch.	♦♦♦	♦♦	♦♦♦♦	
Consultants		♦♦♦♦	♦♦	♦♦
Mass Media			♦♦♦♦♦	
Public Bodies		♦♦♦	♦♦♦	♦♦
Associations			♦♦	♦♦
Firms	♦	♦♦♦		♦♦♦♦♦

Managerial culture in the Basque Country is technically oriented, with an emphasis on SMEs, and with an incipient but strong commitment of working with public bodies. The Basque Country has emerged from an industrial crisis but many companies have been transformed and have become leaders. Accordingly we suspect that there is a lot of implicit knowledge to be disseminated.

Case studies are a powerful tool, useful as an aid not only to teaching but also to making knowledge available to others and thus to enhancing the performance of firms in a given region. Where the objective is to introduce new, advanced practices into firms less aware of developments, the credibility of the company or manager supplying the case history must greatly bear on the effectiveness of dissemination, since many managers are looking for knowledge that can be translated into action. A detailed case history will help managers by affording lessons for learning, especially if it is chosen in light of the geographical and cultural conditions in question.

THE KNOWLEDGE MANAGEMENT VALUE : CIRCULAR PERSPECTIVE

In a linear perspective the agents chiefly concerned with creating fresh management knowledge are to be found in the academic community. The fruit of their research must be converted into tools and methods so that firms can apply it. This conversion is the task of consulting firms. Academics, consultants, publishers, pioneer firms, and so on publicize the new advances. The process comes to an end when the knowledge is adopted by firms in general. Their role is passive to the extent that they simply take aboard the new knowledge coming from the external agents.

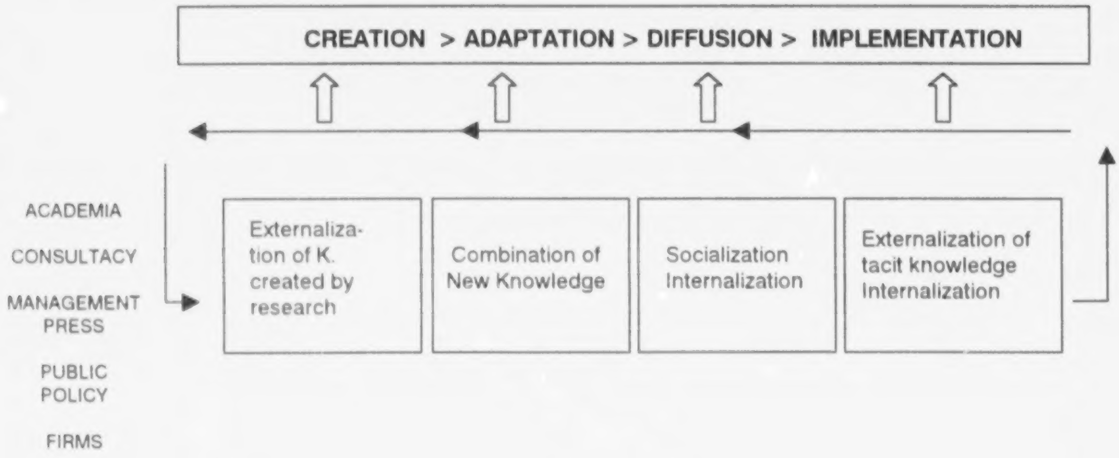
The foregoing might be regarded as a linear view of the matter. A circular view is closer to Schumpeter's theory of the firm. Here it is recognized that knowledge can be created by firms as well, even if their means differ from those of academics and consultants. The theoretical work of Tackeuchi & Nonaka in regard to the mechanisms used by firms to create Knowledge is truly insightful:

*A given firm, or individuals within it, can receive knowledge from external agents or from other members of the organization, but the process in one case is different from that in the other.

*A given firm, or individuals within it, can create vast stores of tacit knowledge, but this must become explicit if it is to be shared by other agents, or by other individuals in the firm.

The processes are illustrated in Table 3.

TABLE 3 - KNOWLEDGE MANAGEMENT VALUE CHAIN. CIRCULAR PERSPECTIVE


CREATION > ADAPTATION > DIFFUSION > IMPLEMENTATION
ACADEMIA
CONSULTACY
MANAGEMENT PRESS
PUBLIC POLICY
FIRMS
Externalization of K. created by research
Combination of New Knowledge
Socialization Internalization
Externalization of tacit knowledge Internalization

Where the question is how they should relate to one another, this new perspective represents a challenge for the various agents involved in the management Knowledge value chain. The status quo is no longer good enough.

CASE STUDIES AS A TOOL USED IN UNCOVERING AND DISSEMINATING MANAGERIAL KNOWLEDGE

USING WRITTEN CASE STUDIES TO EXTERNALIZE KNOWLEDGE

If we take a circular view of the Knowledge value chain, and note the importance of the firm as creating agent, then we are designing instruments that make it possible to pick up the knowledge generated and accumulated in company organizations. This is the first step in the process leading to its dissemination.

Managerial Knowledge is basically tacit, so that it must be drawn out, arranged, and externalized. The methods used must enable the investigator to understand the circumstances in which the Knowledge has come into being and in which he finds its effective application. This means making a major effort to understand the business context in question, as well as the history behind it.

The methods already developed for the writing up of cases,[1] and in a broader framework for social research, may prove a valuable aid toward achievement of the objective. Where these research methods are not known, and, as often happen in a business environment, time is not as abundant as it might be, external specialists should be involved. These will include researchers, consultants, and students.

Naturally, any research method employed in uncovering tacit knowledge should ascribe major importance to the members of the organization in question. The researcher must observe and delimit the circumstances, formulate hypotheses and test them, get information, arrange it and write it up, and so on, but the Knowledge and the guidelines that might be used in getting at it are inside the members of the firm. Interviews with important people in the organization and in its environment are the most appropriate aid to picking up that information in its entirety. It is useful to consult the written and graphic material available (brochures, memos, web pages, accounting data, questionnaires mailed in by executives), but this is not enough.

When the Knowledge has been externalized, then the risk of its loss, from the point of view of the firm or of society, is naturally lessened.[2] Its attractive and faithful exposition in the form of company cases will facilitate its diffusion.

On the one hand, it may in this form be easily conveyed to the actual members of the organization in question. It will be an interesting instrument for use in communicating and educating, for use along with other means of dissemination employed inside the firm.[3]

On the other hand, knowledge may be conveyed to individuals outside the firm. Here we are concerned with the use of cases in external diffusion and management training.

Executives generally wish to acquire knowledge that can be related to what they already know, that will find practical application in real situations, and that will help them in the work they already do. The learning undertaken should be suited to these particularities. In addition, it should entail experimentation and reflection.[4]

If we take for reference the classification proposed by Ausubel, learning may range from rote to significant, the aim in the latter case being to raise the quality and intensity of the links established between the new material and the old. Or it may range from learning by reception, i.e. where the teacher is the main transmitter, to learning by independent discovery, i.e. discovery with external aid. Somewhere in between we find guided discovery (See Table 4)

Learning via cases is thus significant, or it may be tantamount to learning by discovery (independently, or, more probably, under guidance).

Depending on the manner in which it is carried out, it shares a field of operation with teaching methods that seek basically to develop skills, such as guided discussion, role-playing, structured exercises, business games, group undertakings, seminars, or even reading. Without doubt, however, it exhibits different characteristics. (See Table 5)

The case method makes it possible to move appropriately and directly from theory to practice, to the acquisition of information regarding life as it really is for executives in the firm, with a look at team work, the taking of decisions, the summing up of information, the exercise of creativity, and oral reasoning.

The Knowledge and skills here referred to can be dealt with in various ways. There may be variations in the method of case study, e.g. the Kogan method [García del Junco and Castellanos , 1997], the situation method [García del Junco and Castellanos, 1998] and the critical incident method [García del Junco and Castellanos, 1997].

These achievements are of particular interest in higher-level business courses, i.e. when there is already a theoretical basis on which to undertake significant learning, as well as continuous and postgraduate training. In this latter case the student's experience may conduce to more active participation, as well as to more efficient use of class time, with assimilation and swifter application of the proposals that have arisen.[5]

In whichever case, the didactic value of this method like that of any other, derives more from the context in which it is used than from its intrinsic qualities. The context is what gives it real value and allows one to adjust the objectives and mechanics of each exercise and training method to the interests and potentialities of the students, trainers, and firms.

Thus the one case, on paper, may be used in very different ways. It may be used as a basis for taking business decisions in a group or in the classroom, whether or not the students have experience. It may be used as an example of corporate strategies within the framework of a teacher's exposition. Or it may be used as reading material in relation to outstanding practices and events in a business, suitable for the interested student or as a vehicle for conveying executive Knowledge, cultural values, or any other information of interest to the members of the organization in question.

TABLE 4 - TYPES OF LEARNING (AUSUBEL)

Significant learning	Clarification of relationship between concepts	Well-designed self-instruction	Scientific research (new architecture or music)
	Conferences or presentation of most of the textbooks	School work in the laboratory	Strictly routine research, or intellectual production
Rote learning	Application of tables to multiply problems	Solutions to formulae	Trial-and-error problems
	Learning by reception	Learning by guided discovery	Learning by independent discovery

TABLE 5 - TEACHING METHODS (BASED ON AUSUBEL)

Significant learning	Tutorials with principal paper	Tutorials, seminars, group or individual undertakings, guided discussion, Cases	Group or individual undertakings, guided discussion, Cases
	Principal paper, lectures, computer-aided teaching	Readings, structured exercises, Cases, Seminars, business games, computer-aided teaching, role-playing, guided discussion	Cases, role-playing, free discussion, business games
Rote learning	Memorization of notes and texts	Structured exercises, Cases, business games	Business games
	Learning by reception	Learning by guided discovery	Learning by independent discovery

CASE STUDIES AT THE KNOWLEDGE MANAGEMENT SOCIETY

The Knowledge Management Society in the Basque Country is using case studies as an aid not only to teaching but also to collaboration between agents of the management system, the final aim being to make people aware of new ideas in management.

- The most traditional way to use the case method is focused on the learning process of students or practitioners in formation and educational programs. From the point of view of learning process is a way to internalize the explicit knowledge transferred at the formal educational program, by the assumption of the manager role at the case study
- Our experience shows that the case method can also be used inside the firm on which the case study in being based, to achieve a process of externalization of the tacit knowledge created by the firm through their experience.
- Once this process of externalization has been accomplished, the results are not only useful for the firm but also can be diffused and adapted by other firms and agents of the Knowledge Value Chain.

A relation of this sort between the academic and business worlds makes it possible to rectify one of the most serious deficiencies where the creation of new knowledge by practitioners is concerned, as well as one of the major restrictions on the process of learning through experience. It provides the time needed to reflect in a structured way on decisions and initiatives taken in the past.

METHODOLOGY

The principal distinguishing feature in our method is that cases are closed and finished. In a given case there is no first part, devoted to exposition, followed by a reply. And the student is in no way put in the place of the decision-makers.

A case adheres to the following rules, which in this way contribute to the achievement of the objectives described in the course of the present paper:

Selection of Cases

- Firms with growth rates above average in the sector, associated with the generation of employment, and enjoying a certain social prestige. The key to success should lie largely in changes undertaken in management.

Advantages

- They act as driving forces, providing encouragement to firms that are reluctant to use advanced management tools.

Real and Nearby Data

- Names and other data are real.

Advantages

- Better credibility.
- Concentration is on Basque industry, specifically industrial SMEs.
- Use of the cases in different situations between the university, the firm, consultants, etc.

The Expressions Are Respected

- The writers are university professors of the highest level, but they do not write up reality as they would like it to be, or from a critical point of view. Their aim is to get the facts, sum them up, and arrange them in organized fashion.

Advantages

- The teacher learns in the process.
- There is no repetition of theoretical schemata already set forth in books on management. Rather the approach is to adapt this knowledge to particular circumstances.
- Real tacit knowledge is conveyed.

Cases Are Not Classified

- They do not belong to any area, e.g. Marketing, Human Resources, and Finance.

Advantages

- They make it possible to take a closer look at corporate circumstances and at how knowledge is applied in management, as executives know it.

A Work Nucleus, Various Derivatives

- A work nucleus is considered that has inspired the management of the firm and hypothetically has contributed to its success.
- In the notes for the teacher there are other themes suggested for discussion and use.

Advantages

- They can be used with absolute flexibility in various areas.
- Overall it is demonstrated that there are many routes to success.

The Teacher's Notes Are Not A Solution for the Case

- No solution is proposed. The teacher does not have control of the case.

Advantages

- They are useful especially for open discussions, examinations, group work, comparative work, etc.
- They can be used on a visit to the firm or on executives' visits.

CONCLUSIONS

The Knowledge Management Society at the Basque Country (Spain) is using case studies using a wide scope, thus is to convert tacit knowledge embedded in firms into explicit knowledge. The writing and teaching of case studies is used in a process of knowledge management conversion.

ENDNOTES

1. To include a reference or two consulted in preparing the methodology employed in the study of advanced-management firms in the Basque Country.

2. The chance that Knowledge will be lost through the disappearance of its possessors is reduced, but there is a greater possibility that it will be shared, and this may be an aid to the enhancement of operations within the company in question, in other companies, and in society generally. There is, however, the chance that competitive advantage will be lost. The firm will therefore wish to determine how much diffusion is wanted, and what its scope should be. See Grant, R.M. (1991), "The Resource-Based Theory of Competitive Advantage: Implications for Strategic Formulation", *California Management Review*, 33, pp. 114-135. And also Grant, R.M. (1996), "Toward a Knowledge-Based Theory of the Firm", *Strategic Management Journal*, vol. 17, pp. 109-122.

3. For a closer look at the types and mechanisms of internal Knowledge diffusion, see the following: Fernández, E. (1996): *Innovación, tecnología y alianzas estratégicas. Factores clave de la competencia.* Civitas, Madrid. Grant, R.M. (1996), "Toward a Knowledge-Based Theory of the Firm", *op. cit.* Nonaka, I. and Takeuchi, H. (1995), *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, New York.

4. Mintzberg, H. (1983): *La naturaleza del trabajo directivo*, Airel, Barcelona. "Learning is most effective when the student develops a skill in as realistic a situation as possible and later examines explicitly what he has done.... He should put skills into practice and examine the results, and he should study the critical comments of someone versed in the matter." (p. 246)

5. Snow (1976), cited by Díez de Castro and others (1989, p. 164), observed that low-order managerial achievements, such as the identification or description of object or subject, are more easily attained to via more passive methods, methods more controlled by the instructor, e.g. exposition, reading, debates. On the other hand, managerial objectives at higher level, e.g. the acquisition of skills for the resolution of complex problems, call for methods in which the student's contribution is more active (cases, experiments, simulations, etc.).

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THE ENTREPRENEURIAL CREATIVE CASE METHOD

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Abstract

This paper reports on innovations in case teaching in the field of management, and specifically on the development of an entrepreneurial case method. The challenge faced was how to teach management in a non-case environment, where few teaching resources were available (money as well as cases in a native language). Live cases were chosen and later "entrepreneurial creative cases" as the method of case teaching. With creative cases, participants develop an entrepreneurial idea and then create an enterprise to develop and market the idea. They consider enterprise policy and planning, and the outcome must be a feasible entrepreneurial project. A specific innovation was added recently to support the entrepreneurial idea, namely that students make a physical prototype of the product (using Lego blocks, plasticine, etc.) that will be produced and sold, and prepare a poster to present it to the market.

INTRODUCTION

Until recently, schools of economics and business in Slovenia had entirely non-case curriculum's. The rare exceptions were courses in enterprise policy and financial management taught by the author at the School of Economics and Commerce (now the School of Economics and Business) at the University of Maribor, Slovenia. Approximately a decade ago, several colleagues and doctoral candidates were convinced of the benefits of the case method and support for the approach grew. The case method spread to other universities in Slovenia as well. For instance, at the School of Economics, University of Ljubljana, a Case study programme (CSP) was founded offering assistance to anyone interested in teaching and using the case method.

Because of very limited teaching resources, and frequently an unfavourable learning environment, it was often necessary to improvise and to teach in an interactive way using *live cases* and simulations. A live case is about problems in a real organisational environment, discussed in real-time.

Students in the fourth year study of business economics (approximately 180 of them every year) provided a teaching challenge. Introduction of the live case approach was not only well received by these students, but was supported by the managing directors of many Maribor companies, several of whom have been the basis for the cases. Similar support was received from seminar directors and managers (including over 200 seminars to date) and in Slovenian case studies (some of which are available through the European Case Clearing House).

In live cases, information is presented to students by real managers from the enterprise and is usually concerned with the present and the near future. Students respond to information obtained, propose managerial decisions and action, and get immediate and competent feedback from an actual company manager. Diverse interactive methods are used including team work, brainstorming, role-playing, and fieldwork (if the case extends over several sessions). The live case experience offers teachers experience with case preparation and writing, student presentations, and coaching. It teaches students how to analyse actual problems, how to do field work to gather further data and information, and how to make managerial decisions after considering possible outcomes or consequences.

A second type of case method, called *improvised cases*, are based on what is believed to have happened in an enterprise, using information and reports from the daily press. Problems are analysed by students and considered for solutions, primarily by brainstorming and role playing.

Harvard-type cases, based on Slovenian practice, are also occasionally used. Cases from other countries were not always appropriate because of differences in social systems and political infrastructure. Today, the situation in Slovenia is entirely different and it is common to use cases from many other countries.

A third workable idea that arose was the *entrepreneurial creative case*, a method which is very useful in a traditionally non-case environment where there are limited financial and human resources.

ENTREPRENEURIAL CREATIVE CASES AND PROJECTS

Entrepreneurial creative cases [Kralj and Tavcar 1997] represent an innovative approach to teaching entrepreneurship and management. In essence, teams of students (or a single student) are assigned the task of designing venture ideas for establishing a new, fictitious enterprise. The elaboration is in the form of a business plan and/or the design of a basic enterprise policy (i.e., concept, mission, vision, objectives, goals, strategy, and structure).

Recently, this approach has been widened to include the design of the product that will be produced and sold. The participants assemble a physical model of the product from Lego cubes, provide a technical drawing, make a prospectus, and prepare a calculation of its costs and price that will later be incorporated into the business plan.

An entrepreneurial creative case can be simple (e.g., a team brainstorming for 90 minutes) or more elaborate (e.g., a single student writing a seminar paper [closest U.S. equivalent to the seminar paper would be the term project]). The method has been used in both the SM in management and MBA programs at the School of Economics and Business in Maribor since 1985, and recently at the College of Management in Koper [Kralj, Tavcar 1997].

The *entrepreneurial project* is a continuation of the entrepreneurial creative case. It is a similar but more elaborate approach because it is done over the course of a full semester. Each team of students develops venture ideas and designs a new fictitious enterprise documented by a business plan and policy of the enterprise. Each project, many of which have practical value and can be sold, is publicly presented and assessed by a group of experts.

The idea for the project approach has been designed and carried out at the School of Economics and Business in Maribor, Slovenia. It is named PPM – Games of Entrepreneurship, Business Policy and Management and has been used since 1993. Hundreds of workable venture ideas have since been submitted. The games increase students' understanding of the key issues of business policy and of strategic management, enhance the students' ability for systems thinking, teach entrepreneurial thinking, and demonstrate the link between planning and performance. Students also learn how to co-operate and work as a team [Belak, Duh 1995].

ENTREPRENEURIAL CREATIVE CASE – ESTABLISHING A NEW ENTERPRISE

The characteristic of a conventional Harvard Business School case is that it presents, for the purpose of learning, carefully selected real business events and situations from the past, as well as participants' actions and behaviour, when reacting to the described events. The students' task is to define and analyse the problems involved, draw conclusions needed for the decision-making process, and to propose solutions. The students prepare individually, and work in teams in the classroom, using brainstorming and other methods, including plenary discussions. Feedback from the instructor is eventually given. The purpose of this method is to learn to analyse and understand the problems, to draw conclusions, to judge and to make decisions. Harvard cases are very helpful in learning about management and are used extensively at many business schools. However, they do not examine both the present and future. To look into the future the live case method described earlier is helpful.

There is also a need to promote creativity, in particular from the standpoint of entrepreneurship and innovative management. The entrepreneurial creative case or project fits this need well, because students participate in creating the case, define the problems and develop satisfactory solutions. The core of this method is development of the entrepreneurial or innovative idea along with the detailed plan to develop it.

Based on this need, a specific method for establishing an enterprise using creative cases was developed. The method specifies definition of the entrepreneurial idea, ownership and governance of the proposed enterprise, management and policy, and operations. This methodology was proven effective through the years and was used extensively in the last three years, with very good results. Students learned about entrepreneurship and management, and most of the ideas generated were feasible in principle.

In the College of Management, Koper, Slovenia courses on the fundamentals of management, and problem solving and decision-making are taught. For both courses, the entrepreneurial creative case method of establishing an enterprise was introduced. To gain hands-on experience, the students work in teams for 90 minutes, followed by a plenary discussion, and finished with a final written report.

Students can also decide to write a seminar paper in the form of a creative project under the title, "Establishing an Enterprise," during which they must demonstrate the workability or feasibility of the idea. At the College of Management, advising on fifty such seminar papers per year is not uncommon. Students must consider the following areas while working on the entrepreneurial creative project:

1. The entrepreneurial idea.
2. Presumptions, suppositions, and limitations.
3. The name of the business enterprise, legal form, organisation, product line, etc.
4. Ownership issues, including possible partners.
5. Stakeholders of interest, including the student, partners, management, employees, market and financial stakeholders (including the competition), government, public, etc.
6. Description of the enterprises philosophy, including, subcultures of the stakeholders, beliefs of the enterprise (opinion about the enterprise, accepted values, ethics, attitude towards workers, knowledge and sustainable development, basic philosophy of operations), and the willingness and commitment of the enterprise's stakeholders.
7. Mission and vision of the enterprise including, programs (product line, etc.), the enterprises contribution and value to clients, future goals of the enterprise, and courses of development.
8. Expected quality of operations including process quality and reputation
9. Enterprise organisation including governance, management and other roles in the enterprise.
10. Required resources including financial, material, human, etc.
11. SWOT analysis of the projected enterprise including strengths, weaknesses, opportunities, and threats
12. The business plan.
13. Conclusion (addressing questions such as, is the idea feasible, would you invest in it, etc.?)
14. A managerial summary outlining parts of the seminar paper interesting to the reader, and which might provoke further learning. This summary should be the basis to defend the work.

The business plan (point #12) requirement was not always part of the seminar paper because students sometimes lacked knowledge of this subject, particularly freshmen.

The method has been used at both the graduate and undergraduate level. Students generally believe that their ideas are feasible, and many of them would be willing to accept the risks required to start their venture. A list of some ideas of the last class of freshmen (1998/1999) included:

Name of the Firm, Mission (programme)

- CLEANING SERVICE, cleaning of premises and objects.

- JUST MOVE YOURSELF, the dance teacher that comes to your home.
- STEP, aerobics in a rural environment.
- PARTY SERVICE, organising home entertainment, receptions, celebrations, etc.
- SMALL FLAME, candles.
- HOT SNACK, fast food with very friendly service.
- SNOWMAN, distribution of ice cream and frozen food.
- TIP SAIL, the theory and practice of pleasure sailing.
- REAL SKI CENTER, snow skiing and service.
- RECREATIVE TENNIS CENTER covered tennis courts.
- PINKO PALINO, window dressers, lighting, design of messages, business presents.
- THE LITTLE FOUNTAIN PEN, "the best in the world"
- HOME MADE, earth-friendly products.
- GRANARY, organic food.
- FILKO, tourist agency for young people (pupils, students, etc., including special services for graduation, etc.).
- EXPRESS, door to door transportation of passengers (transportation to work, school, entertainment, the disco, etc.).
- THE LITTLE BELL, baby care and babysitting when kindergarten is closed.
- CANMAL, medical and orthopaedic remedies.
- CONSTRUCTOR, assembled houses, interior design, garden arrangements.
- MAINTENANCE, of houses and garden.
- STATIONERY AND PUBLISHING, paper trade and editing small magazines.
- ELECTROVISION, built-in electronic parts, intelligent alarm systems.
- CABLE NET, TV cable net for the whole state
- MEDIATOR, agency for organising, non-legal representation of clients, advertising, etc.

ENTREPRENEURIAL CREATIVE CASE – PRODUCT DESIGN AND THE CREATION OF A PHYSICAL MODEL OR PROTOTYPE

An innovative continuation of the creative entrepreneurial case was to introduce the physical creation of the proposed product by means of didactic toys like Lego blocks, plasticine, etc. This idea was developed in 1997 and tested with students in a decision making and problem solving course at the College of Management in Koper. Students were asked to develop the design of a product that could exist in real life, to create a physical model of the product, to provide for the technical and commercial documentation necessary for production and marketing, and to make calculations for an appropriate business plan.

This modeling approach has since been used with over 60 teams at the College of Management in Koper and in the School of Economics and Business in Maribor. It has been very successful and students have enjoyed working on the cases.

The phases of this case approach are as follows [Tratar 1997] :

1. Introduction of didactic instruments for the case. Each team of participants gets a set of Lego blocks, plasticine, or other appropriate construction material, and team members are encouraged to handle them for 15 minutes to get a feel for the materials.
2. The task is given to design a new product and construct a prototype. Each member of the team tries to shape a possible product. The instructor might elaborate on several ideas and explain them to the team.
3. Each member of the team explains their idea and shows their model. The team listens to the arguments and makes a choice. The author of the chosen product usually takes over management of the project.
4. Each member of the team gets partial assignments towards completion of the project, and the team discusses their propositions and assembles them. Taken in total, the assignments

represent a complete plan that includes business economics considerations, with projections of the business plan.

5. Working groups are formed which are usually comprised of four or five teams. They represent a plenum to which product ideas are presented and discussed.
6. After each team finishes their work, a final report is submitted to the instructor within a few days.

This method promotes creativity and innovation, and the instructor can measure the participation of the students in this interactive study and count it towards their final course grade. Some practical, as well as extravagant, ideas proposed to date include:

- ROBOT ROBBY – robot for different home services.
- WISE TEDDY BEAR – plaything with built in sensors and transmitter to warn parents about possible perils for a child.
- SPEAKING RABBIT – a toy to teach children a foreign language.
- SWEET DREAMS – expensive bedroom furniture.
- EASY CHAIR – sets of seating furniture.
- VINEYARD CULTIVATOR – a small tractor-cultivator with special attachments for vineyards.
- TONY FLY – a business aeroplane (a nice idea but required too many resources).
- YACHT APHRODITE – too expensive.
- FANCY BOTTLE – a business gift.
- FIRESIDE - prefabricated portable corner fireplace.

CONCLUSIONS

The search for an inexpensive but efficient interactive method to teach using case studies in a traditionally non-case setting has led to the innovative entrepreneurial creative case. The method uses entrepreneurial ideas of participants to create a case study and develop it into a project. It is based on knowledge of enterprise policy theories, theoretical and practical approaches to management, and managerial functions such as business planning. In fact, the background knowledge of participants must be broad, or must develop with the participants. This knowledge includes areas such as entrepreneurship, governance and management, interdisciplinary knowledge of planning, economics, finance, law, behavioural sciences and quantitative methods.

The entrepreneurial creative case method can be used as an in-class case study in just 90 minutes, or can be prolonged into a semester-long seminar project. It can be done by one student or in teams. The technique provides a good basis for grading students. Designing a product and establishing an enterprise approach promotes creativity and innovation.

An important aspect of the approach is that participants create the case using their own knowledge. When students discover their lack of knowledge in a particular subject, they are motivated to do remedial work to strengthen their backgrounds.

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CASE STUDY METHOD VERSUS SIMULATION MODELS IN THE LEARNING PROCESS

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Abstract

In our course titled "Business Economics III", which takes place during the second year at the University, we work with two different methodologies: a simulation model called "Estrategame", which we developed four years ago, and the case method (cases: Gillette and Cott). We have been studying the results of these two methodologies for the last four years.

This simulation model allows the students to define the most suitable competitive strategy for their enterprises and to adapt it during the process. The competitive strategies adopted in the model are those of Porter: Cost leadership, Differentiation and Specialization.

We also try to find any significant difference, according to their personal characteristics, between the students working with one methodology and students working with the other.

INTRODUCTION

Four years ago we developed a simulation model called ESTRATEGAME for our course titled "Business Economics III", and we have been studying its results for the last three years. We analyse its results compared with those obtained with another well known experiential learning method: the case method.

We all know how the case method works and it is not our aim to explain anything about it. We should only point out that the two cases we work with (Gillette and Cott) are quite short and help us putting into practice all the theory about the Competitive Strategy.

What we should do before any other thing is to explain what both, the simulation model and the course titled "Business Economics III", entail to help you all to understand better our study.

BUSINESS ECONOMICS III

ESTRATEGAME was devised to implement the goals of the course called Business Economics III.

This course takes place during the second year of the Business Administration degree at the University of Deusto, and presents concepts, theories and analytical methodologies which are useful in defining the most suitable competitive strategy for an enterprise in a market with specific structural characteristics to study. It is based essentially on Porter's conceptualization (1980).

A manual and teachers' notes are the means to make students aware of these concepts, theories and analytical methodologies.

The practical application of these concepts, theories and analytical methodologies can be implemented during the course through one of these alternatives:

- A simulation model: ESTRATEGAME.
- Case study method: 2 different cases: Gillette and Cott.

ESTRATEGAME

Estrategame is a competitive simulation model developed at the ESTE-Business Administration School of the University of Deusto in San Sebastián.

Estrategame simulates a real market which has the following structural characteristics:

- There is only one product.
- There are economies of scale, with decreasing costs as volumes of production increase.
- The experience curve has important effects: your business can reduce costs as it increases the number of acumulated units produced and sold.
- Customers' buying criteria allows for the existence of differentiation between suppliers: you can differentiate your product through your brand and/or its technological quality, if you invest more than your competitors, over an extended period, either on advertising or on technological research and development.
- Customers are not all the same. There are three different segments in the market: Those who are very worried about price, those who think quality and technology are the most important characteristics of a product, and those who are loyal to brands, aesthetic design and image. All of them are sensible to price, quality, technology, design and image. But the elasticity of each segment's demand is different for these characteristics. We identify these three segments as pragmatics, experts, and brand followers.
- Every competitor has the same start-up situation (production capacity, technology, image, and so on).

The competitive strategies which are applicable are those of Porter: Cost leadership, Differentiation and Specialization.

Once strategy is chosen, the student must be able to make decisions about price, publicity, research & development, investment in factories, and volumen of production in a coherent way with the chosen strategy.

Finally, they must be sure that they have the material resources to carry out all the decisions which they have already made. That means that there must be a relationship between strategic and operative decisions. Therefore the students must decide on the purchase of raw materials, credit on call, and bond investment.

The results of the students' decisions are communicated through reports (balance sheet, income statements, market research and data about competitors), and the students must analyse the competitive position of their enterprise and that of their competitors. They should also try to guess the strategy that they are carrying out and the probable results. This analysis task must be presented in writing to the lecturer after every two decisions made.

THE LEARNING PROCESS: CASE STUDY METHOD VS. SIMULATION MODEL

The pedagogic process followed by both methods places emphasis on the four stages of the individual learning process described by Kolb in 1984. Kolb is one of the authors who has broken down the barrier between conscious and unconscious learning, building a bridge between them, and integrating both of them in a unique process. The learning process has four phases:

Students learn through action. However, to be able to learn from their actions, they must be able to think about them, that is, think about their experience and its results. Subsequently, we must move on to the abstract: they must check the results of their experience with the theories, knowledge and assumptions that made them take that action.

So, the pedagogic process followed by both methods places emphasis on these four stages. A priori, comparing the case study method and the simulation model we have no conclusive answer as to which method gives better academic results, because both of them have advantages and disadvantages:

- The advantages of the case study method are the diversity and the authenticity of the situation presented. The student is confronted by very different kind of business situations. The enterprises normally have very well known names, and the given data are true. The greatest disadvantage is that the students cannot put into practice their own decisions and therefore, they cannot know what results they might have got from those decisions. The experience is obviously indirect, and the role the student plays is simply that of a consultant or adviser who proposes but does not implement.
- On the other hand, the simulation model has the advantage that the student really does take the role of a manager, taking as many decisions as necessary during the course of time, assessing the influence of those decisions, and improving the decision process as they gain experience. From this point of view it allows for the closing of Kolb`s cycle. Its disadvantage is that only one single situation can be dealt with. This situation is simulated, and therefore simplified.

To assess the influence of these two methodologies on the learning process, we have made an analysis of the results obtained from both approaches during the last four academic years in which Business Economics III has been running.

EXPERIMENTAL DESIGN

CHARACTERISTICS OF THE EXPERIMENT

Population

During the four academic years there have been 207 during the first year, 228during the second year, 216 during the third year and 222 students during the last year. These students are between 19 and 20 years old and without any kind of professional experience. We divided this population into two groups. One group consisted of those students who followed the case study method (165 students this year, 155 students last year,171 in the second year and 177 in the first year), and in the other group were the students who followed the simulation model (57 students this year, 61 students last year, 57 the second year and 30 the first year). Both groups worked with the same methodology for transmitting concepts, theories, and analysis and decision models, namely: lectures, questions for reflection, various didactic materials and a students' book. However, they had the opportunity to complete the activity-based component by means of the case study method or the simulation model. Afterwards they all took the same exam. As the choice was entirely voluntary we could not control a priori the homogeneity of both groups.

Now that we have already accumulated a significant amount of data (873 students during these four courses, 205 of them having worked with the simulation model), as well as having made the analysis year by year, we can work with the whole group. To work with the whole group we adjusted the marks (Business Economy II, Business Economy III and Academic Average) taking into account the mean of such values for each course, so that we could correct possible differences due to changes in the exam's level of difficulty from year to year.

Variables to Explain

The marks obtained in the exam for the course Business Economics III were used to evaluate the efficiency of both methodologies. This was a written exam, the same for both groups, and it was corrected by the same teacher.

Explaining Variables

The variables we consider to have had a possible influence on the results were the following:

- Personal characteristics: personality features of each student were evaluated with a psychological test called OPQ. The students took this test when they applied to enter the university. The various characteristics assessed and their meaning can be seen in Appendix 1.
- Academic average: average marks each student obtained in all the university courses taken before the present one. We considered this variable to be the best indicator available for

indicating working capacity and intellectual level.

- Marks obtained during the course entitled Business Economics II. This course was taken during the first year at the university, and the whole population took part in it with a simulation model included.
-

Teacher Effect

In both groups the teacher evaluating and tutoring the student was the same, and it was the first time they had worked with this teacher.

Time

The working-time needed for the case study method and also for the simulation model were designed to be the same. The only difference was that the simulation model provided a handbook to introduce the model which required extra time for it to be read, but the cases referred to also had to be read.

Hawthorne Effect

The students did not know that they were going to be the subject of a research project, so this effect was controlled.

Differences

Between the first year and the three subsequent years, with regard to the formation of both groups: students could always choose between one methodology or the other, but:

- Working with a simulation model in the Business Economics III course was obviously a new experience only in the first year. With all the consequences this could carry (expectancy, unsecurity,...).
- This year we had 57 students, last year 61 and 57 in the second, while in the first year we could only have 30 because we were trying out the simulation model for the first time. So, some students who wanted to work with the simulation model, could not do so in the first year because there was limited availability.

Comments

In the second year there was one topic that was studied in depth on a specific case. Although students working with the simulation model were told to study that chapter, it seems that they failed to do so because one question in the exam was about this topic and the group working with the simulation model did worse on it. Therefore the research had to be done without taking into account this troublesome question. The rest of the years nothing similar occurred.

STATISTICAL TREATMENTS

Every year, once the course had finished, we evaluated the academic results to see if there was any significant difference between both groups.

In every analysis that follows we worked with the statistical application for computer SPSS for Windows.

First we checked with the Multivariate Analysis of Variance (MANOVA) that the four populations of each academic year studied in our research were homogeneous according to personality features. We can point out that they had the differences shown in table number 1. We have worked with the MANOVA analysis because the 16 personality features set a profile and we thought that it was better to analyse all of them together rather than analyse them separately.

For the rest of the variables we worked with ONE-WAY ANOVA to test whether or not there were differences in the population means among the four years.

Afterwards, we checked that both groups, simulation model and cases, followed a normal distribution with the goodness of fit test (Npar test).

As has been said before, we could not ensure the comparability of both groups under investigation because of their voluntary selection of either one methodology or the other. So, a posteriori, we checked the possible differences between both groups with a ONE-WAY ANOVA analysis:

- We checked if the academic average of those working with the case study method was significantly different from those working with the simulation model. At the 5% significance level, we can accept the hypothesis that those who work with the simulation model have a better average mark than those who work with the case study method. It seems that both groups are different according to their working and intellectual capacity.
- We checked if the mark for the course Business Economics II of those working with the case study method was significantly different to those working with simulation model. For a 95% confidence interval, we can accept the hypothesis that those who worked with the simulation model had better marks for this course than those who worked with the case study method. This shows that both groups are different according to the learning capacity of the simulation model used during the first year of university.
- At the 5% significance level we can accept that those who work with the simulation model were less creative and more physically active.

We concluded with a MULTIFACTORIAL ANALYSIS to check which factors explain the variable marks for the course Business Economics III, eliminating the effect of the personality features and all other variations in marks. And the conclusion is that there is no difference between those working with the case study method and those working with simulation model, although the interaction of the rest of the factors influenced the variable.

With a MULTIPLE REGRESSION (STEPWISE METHOD) we saw that getting better marks in Business Economy III had a lineal relationship with having a better academic average and being less "protagonist" and less traditional (the meaning of these concepts can be found in Appendix 1). These variables accounted for 32,9 % of marks for Business Economy III. Variables in the equation were the following:

VARIABLES	B VALUES
Academic average	0.906482
"Protagonist"	-0.044979
Traditional	-0.041724
Constant	0.948808

CONCLUSIONS

- Neither one methodology nor the other was founded to be more efficient as a pedagogical instrument for the learning process. However, by doing the analysis year by year, in the first year, the results showed that the simulation model was a more efficient pedagogic instrument than the case study method for the learning objectives of the course. But this situation was not repeated subsequently, and from then on neither one methodology nor the other provided a more efficient pedagogical instrument for the learning process. The better marks in Business Economics III of those having worked with the simulation game could be explained by the non-homogeneity of both groups, as this group has a better academic average (which is strongly related to the marks for Business Economics III)
- The group of students working with the simulation model and the group working with cases had different personality characteristics. Doing the analysis year by year these traits were found to be different in the four periods of research: the first year students who preferred to work with the simulation model were more self-confident, more competitive, more physically active and less traditional. In the second year they were more quantitative and more conceptual. In the third year

TABLE 1

	94/95 MEAN	94/95 STD	95/96 MEAN	95/96 STD	96/97 MEAN	96/97 STD	97/98 MEAN	96/97 STD
Personality Characteri.	No signif. Difference	---	No signif. Difference	---	No signif. difference	---	Signif. differences	---
Bus.Econ.II	7.0229	1.419	6.3390	1.169	6.0093	1.308	5.9769	1.3099
Bus.Eco.III	6.2401	1.282	4.4035	1.267	5.7689	1.463	6.0360	1.4672
Acad.Average	7.0610	0.786	6.3185	0.972	6.5726	0.775	6.1321	1.3248

The significant differences between last year´s population and the rest of populations are the following:

	94/95 MEAN	94/95 STD	95/96 MEAN	95/96 STD	96/97 MEAN	96/97 STD	97/98 MEAN	97/98 STD
Ambitious	5.4348	1.9294	5.6245	1.8222	5.4352	1.8691	6.4144	2.3724
Controlled	5.5217	1.9454	5.4599	2.0900	5.3750	1.9608	4.4324	2.1698
Quick to decide	(5.3623)	1.9630	(5.2911)	2.0236	5.6435	2.1432	4.9865	2.1911
Socially Aware	5.5652	2.0035	5.4219	2.0146	5.4537	1.9017	5.0360	2.1183
Optimistic	5.4010	2.0945	5.6287	1.9543	5.5787	1.9104	4.7748	2.2398
Self confident	5.4155	2.0003	5.6582	2.2183	5.4352	1.9873	4.0450	2.3930
Traditional	5.3961	2.1605	5.6076	2.0279	5.5694	2.0607	4.4640	2.0768

Anyway, we checked that these factors don´t influence the variable we want to explain (mark of Business Economics III).

they were less competitive, more physically active and less quick at making decisions, and in the fourth year they were more influential. And as we have seen, working with the four years as a whole the differences were that those working with the simulation model were less creative and more physically active. The only characteristic that comes up three times in the five different analyses is "physically active". The only reason we can find for this is the following: those who chose to work with the simulation model had to give in their names at the Faculty Office, and they had their practical sessions outside of the general timetable for the rest of the class, so this could have been working as a dissuasive factor for those who are not "physically active".

- The preference for the simulation model seems to be based on the "Pygmalion" effect, that is: students who got better marks working with a simulation model in their first year at the university preferred to work with a simulation model.
- For the four years and working as a whole, the marks for Business Economics III have a lineal relationship with having a better academic average. This is quite logical because if you have a better intellectual capacity it is more probable that you get better marks in all subjects. Each year we got different personality characteristics affecting this variable: in the first year (94/95) no personality characteristic was influential (but having better marks for Business Economics II was significant), in the second year (95/96) there was a lineal relationship with being "more controlled" and "more independent", in the third year (96/97) there was a lineal relationship with being "more influential", in the last year (97/98) there was no personality variable relevant in this relationship, and for the whole group the personality variables were "less protagonist" and "less traditional". As these characteristics are different from year to year we suppose that it is just a coincidental matter.

There are still some other questions to be answered through further research, such as:

- Which method is more effective with regard to problem solving capacities? (our current research is more related to transferring knowledge)
- In which circumstances (personality features, previous experience, personal capacities,....) is one method more effective than the other?

We expect to address these and other questions in subsequent research.

APPENDIX 1
PERSONALITY CHARACTERISTICS EVALUATED WITH THE OPQ TEST

INFLUENTIAL:	Persuasive. He/she likes selling and negotiating, convincing with arguments. He/she influences other people's opinions.
"PROTAGONIST":	Domninant. Capable of taking responsibility and challenges. He/she manages and organizes others.
SOCIALLY AWARE:	Kind, with a lot of friends. He/she gets on well with others easily.
INDEPENDENT:	With firm and solid opinions. He/she argues and defends his/her points of view. Difficult to be led.
TRADITIONAL:	He/she prefers established methods, proven and demostrated things. Careful with changes in methods.
QUANTITATIVE:	He/she manages quantitative data well.
CONCEPTUAL:	He/she does well in working with large amounts of information.
CREATIVE:	With ideas. He/she likes to look in his/her own mind for reasons. With wide interests. Innovator.
SYSTEMATIC:	Methodical. Constant, precise, thorough. He/she likes order and looks after details. He/she perseveres in routine.
SELF-CONFIDENT:	Well endowed, with the self-confidence to act socially. He/she knows how to look good.
CONTROLLED:	He/she keeps calm and self-controlled. He/she seldom gets excited or angry. He/she does not show his/her feelings.
OPTIMISTIC:	With a positive and attractive vision of the future. Encouraged and having hope. Not at all downhearted.

COMPETITIVE:	He/she want to win. He/she assumes challenges, he/she gets involved and works hard to achieve.
AMBITIOUS:	He/she need to do things very well. He/she looks for new opportunities, results and goals.
PHYSICALLY ACTIVE:	With energy and vitality. He/she can not just stand by. With energies available at any time.
QUICK TO DECIDE:	He/she solves problems quickly either by action or by thinking. Impatient to decide.

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EDUCATION FOR DECISION MAKING IN THE GLOBAL-LOCAL ARENA OF AGRICULTURE: CASE STUDIES AS AN APPROACH TO TEACHING AND LEARNING IN AGRICULTURE

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Abstract

Crucial for effective and efficient education and training, whether it is oriented towards a specific subject matter such as agriculture, health or nutrition, is the attempt to stimulate, motivate, activate and orient the target group. The use of teaching cases is one experimental and participatory approach. This article discusses "the other" training approach in the context of agriculture training. The author wants to stress the need for interactive training in order to train future decision makers to become critical thinkers and reflective practitioners in a globalizing world in particular in relation to the "Global-Local Arena of Agriculture".

KEYWORDS: teaching-cases in agriculture, global learning, decision making capabilities

INTRODUCTON

Have you ever heard about BSE, Dolly or dioxin? What does NAFTA, WTO or EU have to do with this? It goes without saying that these are parts of problems or solutions we have to deal with today.

We all know that the major challenges facing the 21st century include: managing the environment in a sustainable manner; dealing with the exploding rate of population growth and urbanization; meeting health, education and literacy needs; ensuring food security; and eliminating poverty.

Education and research are important factors and essential elements in this process. With respect to agriculture and rural development a central question is how effective will be higher education for Agriculture in the training of future researchers and professionals? In particular how successful can agriculture education be in confronting partial problems of the above mentioned ones such as:

- from production oriented agriculture to sustainable rural development;
- from agricultural mass production to value added and high quality food products; and
- from training in agricultural technologies to education for multifunctional agriculture and rural development and natural resources management.

"Change may take place because of people's knowledge, understanding, skills, attitudes and behaviour. The change should result in a person having an increased capacity to make decisions and to choose, implement and evaluate strategies effectively utilizing their available resources. (Taylor, 1998)."

But how to achieve this?

AGRICULTURAL LEARNING

In many developing and likewise developed countries of the world the quality of teaching and learning is still unsatisfactory. Learners are often passive listeners and not active participants. In many cases they are told and not taught. Their knowledge increases but the application is missing. It is important to introduce a concept on "learning (that) is not finding out what other people already know but solving our problems for our own purposes by questioning, thinking and testing until the solution is part of our life" (Rogers, 1997).

Meeting these challenge requires information, knowledge and changing attitudes of the learner, which only can be achieved by participatory learning and increased ownership. Even if students are prepared for professional life by only giving them the experience of an internship or a practical period in the later part of their study, no doubt these are valuable experiences, but these persons are not fully prepared for their contribution in tactical or strategic decision-making processes. If not in their first job, they probably will meet such necessities which require their soft skills e.g. social competence, later on in their professional career. This holds for many more natural science based courses, but it is also a common practice in business and management education.

In addition there is a need for enhanced training in decision-making capabilities in the international context. By responding to sustainable agriculture today, agriculture education needs more international orientation. Because many graduates will experience some international aspect related to their work. And as a consumer, we are also affected even if those implications seem to be more indirect.

However, the level we experience is starting from the local and/or national one. Nations are involved in agreements, understandings, undertakings, conventions, etc. which relates to global challenges such as population growth, peace and war, poverty and wealth, free trade, information and communication technology, biotechnology, depletion/conservation of natural resources, etc. Likewise the global perspective deals with: specific agreements, conventions and regulations, which have been introduced systematically into international development.

Education with teaching cases is an innovative and appropriate approach among others in this context in order to train these competencies and capabilities as well as transmit the world issues to local concern.

TEACHING CASES

"What I hear, I forget. What I see, I remember. What I do, I know." (rural proverb)

A teaching-case is a written description of a real-life situation that has taken place or that is still in progress. A case study contains all of the necessary information for students including tables and figures, relevant data, etc. It is a basis for discussion among the students in the classroom and focuses on the analysis of the situation. Multi-perspectives are described and more than one decision (not solution) is possible.

Teaching cases fulfills and responds to the need for personal development. It is an intellectually stimulating method. It gets away from the lecture method and forces students to practice their problem solving skills in dealing with a specific issue.

Teaching-case discussions are more tactical decision simulations in which the focus is an evolving problem that depends on data interpretation and management for a solution. The primary intent is that of developing participants' cognitive thinking about strategies, i.e. their capacities of data selection, organization, interpretation and management.

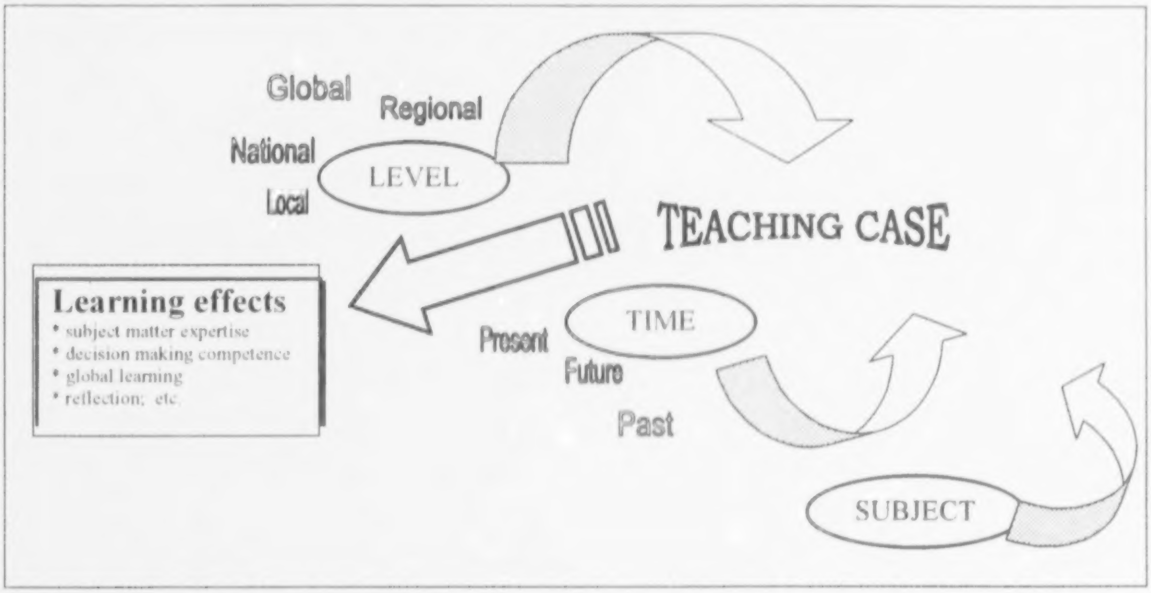
Furthermore the focus of a social process simulation is the various human interactions involved in pursuing social or political goals. Participants, in their role, attempt to complete an assigned task in a social milieu. The exercises focus on the interactions among people and the ways that one's beliefs, assumptions, goals and actions may be hindered or assisted in interactions with others. The strategies include interviewing, writing, questioning, editing, negotiation skills, persuasion, confrontation and others. As participants attempt to achieve their social or political goals, they may experience frustration, pride, rejection, acceptance, cooperation, conflict, anger and other emotions.

In summary, learning with teaching cases improves the competence of: cognitive, methodology, social and personal competence.

By using teaching-cases, universities and colleges will have the opportunity to introduce a real global, or international perspective into education, it offers an ideal opportunity for global-local learning. Because with appropriate teaching cases in the context of agriculture you are able to:

- widening the self horizontal view/perspective of agriculture for a global one; this raises awareness of global-local inter-relation(ships) and reflects the self/personal position and involvement;
- strengthening competence of reflection/analysis of one's own identity on the basis of changing positions, through communication and estimation;
- strengthening the competence of reflecting one's owns consumer attitudes and one's own activity;
- supporting the competence of empathy;
- picking up the global tendency and helping to evaluate/estimate one's own life situation and in its future prospective; and
- interdisciplinary and participatory learning.

FIGURE 1 - COMPONENTS OF TEACHING CASES



If cases and social-system simulations are based on real-life situations, the global-local arena will be part of the higher agricultural curriculum. Students will acquire subject-matter expertise from a real global to local perspective, and at the same time acquire skills and attitudes such as decision-making skills, social skills, international communication skills, etc..

TEACHING CASES IN THE GLOBAL-LOCAL CONTEXT OF AGRICULTURE

The Agriculture (including livestock, forestry and fisheries) and Food Industry and the Management of Natural Resources are areas in which a global approach is an important issue. In both areas, the development of proper strategies and tactical management processes is at the heart of the drive for global and sustainable development. The related decision-making processes take place at various closely interrelated hierarchical local, national, regional and global levels. As a consequence, the efficiency and effectiveness of these decisions should take into account the various levels. They become crucial for achieving sustainable development of the agri-food system.

FAO together with the University of Agriculture, Wageningen, The Netherlands, has developed teaching cases with an emphasis on the local-global agriculture for the higher agricultural training sector. Universities will work with first hand information and also be able to enhance their learning process by using those cases. Since FAO has:

- the unique in-house combination of subject matter expertise on almost all fields of agriculture, organised around the global mission of FAO,
- the subject matter expertise on management of natural resources, and
- an excellent working-knowledge of the processes taking place in the global decision-making arena of agriculture and FAO expertise and information resource base is used to prepare the teaching-case documents.

The common basis of the teaching-cases is the ever-widening inter-disciplinary approach to the decision-making processes at the global, regional, national and local level in agriculture. In the end, target groups are students, scientists and professional workers in the field and the issues are discussed both from a scientific and professional view.

By training students about current issues that are now being debated at the global level, and explaining how FAO, as a technical organization, is involved in global/local processes of decision making, they will obtain:

- a keen insight in these debates and negotiations,
- develop ways to contribute to this, and
- learn more about the role of FAO as a United Nations agency.

In particular does the global-local agricultural teaching cases refer to the different levels with the following focus:

- At the *local level*, we refer to the management practices of the farmers in selecting the best production factors, in relation to their resources, the constraint of the natural and institutional environment and expected best possible way to enter the market; e.g. household management, farming practices;
- At the *national level*, decision-making is concerned about the provision of such basic resources including the agricultural knowledge and information system, the credit system and forms of financial support, the infrastructure and other institutional arrangements; e.g. extension service;
- At the *regional level*, countries agree on economic policies that often have a profound impact on agriculture and on the well-being of people in viable rural areas. Examples are the European Union with the CAP, the common agricultural policy, the NAFTA-agreement between the USA, Canada and Mexico, ASEAN countries, etc. Especially at this level, decisions will have an impact on the rural landscape its eco-systems, its species composition and other aspects of biodiversity. And of course the effects of many decisions will go beyond the indicated geographical area.
- At the *global level*, important agreements were made and processes of refining and execution have been initiated. To name a few: the WTO and the free trade agreement; the World Food Summit, Habitat, the UNCED, and the conservation of natural resources, e.g. the conservation of biodiversity etc. And, of course, a decision at each of these levels will have impact on one or more of the other ones.
- The case presents links to the different hierarchical interrelated levels of organizations. This enables students "to argue up-and -down the different levels and vice-versa." In the following a few examples are given of developed teaching cases:

TEACHING CASE: THE GLOBAL STRATEGY FOR THE MANAGEMENT OF FARM ANIMAL GENETIC RESOURCES

This case focuses on the opportunities for countries taking up the management challenge for animal genetic resources. FAO has established the Global Strategy for the Management of Farm Animal Genetic

Resources, designed, implemented and led by the Initiative for Domestic Animal Diversity (IDAD). This work has been carried out to recognize the urgent need to assist countries take effective management action to develop, use and halt the erosion of their remaining animal genetic resources.

Background

Domestic animals meet at least 30 percent of human needs for food and agriculture in the form of meat, milk, milk products, eggs, fibre, fertiliser for crops and draught power. Some 4,500 breeds drawn from 40 or more animal species make this major contribution. These breeds, developed over the past 12,000 years, represent the remaining pool of genetic diversity from which future demands must be met. The problem is that there is a lose of least six breeds per month.

Learning Goals

Students, next to competencies developed usually in case-based learning:

- are able to explain the contribution of domestic animals to human needs for food and agriculture;
- have a good working knowledge of the Global Strategy for the Management of Farm Animal Genetic Resources and its country, regional and global operations; and
- have developed capabilities to contribute to the development of national animal genetic resources management strategies.

Leadership Development

In this case the global strategy needs better local implementation. Because the future of each nation, and of humanity as a whole, depends on how the present generation takes up the challenge of developing policies and action for sustainable food production. The global strategy provides a mechanism for national and international planning, communication, cooperation, technical action and policy development in managing animal genetic resources. In what way can this come into reality for the countries? During class discussion students are invited to add to the currents ideas of taking up the national challenges, which involves:

- the development of a management capability;
- the assessment of needs;
- the development of strategy for action;
- implementation; and
- monitoring evaluation and reporting.

TEACHING-CASE: THE IMPLEMENTATION STRATEGY OF CONSERVATION TILLAGE FOR SUSTAINABLE AGRICULTURE

The case will focus on the development of favourable policy environments in countries. The purpose is to assist farmers in developing their ability of making critical and informed decisions that render their farming systems more productive, profitable and sustainable.

Background

Growing world population on one side and degraded agricultural land resources on the other present a real challenge to feed the world. Pessimists think the challenge cannot be met, optimist think it can. A realistic assumption is that the world can only be fed with the best and sustainable use of all available resources of which land and water are particularly valuable. What are the alternatives? Better land husbandry including the process of selecting and managing systems of land use in such ways that productivity is sustained and natural resources are conserved or enhanced. *First Step*: Conservation Tillage: Any tillage and planting system that covers 30 percent or more of the soil surface with crop residue, after planting, to reduce soil erosion. *Second Step*: Conservation farming. How does it work? Soil cover: (1) protects the soil from rain, wind, sun; (2) provides feed for soil life, and (3) serves as substrate for soil organic matter. Long term results of biological tillage include: (1) continuous macropores by earthworms and plant roots which increases water infiltration and reduces compaction,

(2) soil fauna incorporates organic matter and produces tilth, and (3) soil organic matter stabilises the structure.

Learning Goals

Students, will be able to:

- explain the rationale and practices of conservation tillage, of conservation farming, and of FAO's strategy of the approach used by the Farm Field Schools and understand the benefits of the methods and their contribution to feed the worlds population in a sustainable way;
- understand the concepts and factors involved in decision-making process adopting or not adoption conservation tillage practices, have a keen insight in the resources dilemma farmers meet and the way how various scientific disciplines could contribute to coping with the dilemma;
- have developed capabilities to contribute to the development of favorable policy environments for adopting conservation tillage and farming.

Leadership Development

In this case we have a local action plan that is in need of a global strategy.

Because the successes achieved that show how the world could be fed through sustainable intensification using better land husbandry. Most, though, are still only island of success. This is partly because favorable policy environments are missing. For more success more "global" policy is required.

TEACHING CASE: THE NEW SYSTEM FOR EXTENSION IN RWANDA: THE CONSULTANT'S DILEMMAS

In the recent war, 2000 extension workers were killed or displaced. Consequently, extension services are now at a minimum. The Ministry of Agriculture of Rwanda has asked FAO for help and a consultant was hired to analyze the situation and to make recommendations for improvement.

In a new effective and efficient extension system, various actors should work together? How can that be achieved if opinions differ about (1) centralization or decentralization of government's power for decision making and (2) what the private sector is to do?

Learning Goals

Students should be able to:

- explain the present situation in a historical colonial context, paying special attention to multi/inter-cultural issues;
- analyse the present situation and possibilities for future action, taking into account technical, social, economic, and political elements and factors; and
- understand the consultant's and FAO's positions.

Leadership Development

There is a need of restructuring and reorienting the entire extension system of a country with consequences for the institution and workers in the field.

In a new effective and efficient extension system various actors should work together. How can that be achieved if opinions differ about (1) centralization or decentralization of government's power for decision making and (2) what the private sector is to do?

ENDNOTES

1. Education for decision making in the global-local arena of agriculture by using the methodology of teaching cases means also global-local learning for the challenging society, permanent changing economy and intercultural development; it is an adequate methodology to meet the demands and learning of society in the 21st century.
2. The application of cases presents a low cost technique, which can be easily used in a simple equipped classroom; the success of learning does not depend on high technology but on teachers

who are well trained in communication skills and participatory methods; they need competencies in conflict and group management.

3. The interest of developing and utilizing teaching cases inside and outside FAO is growing. FAO which is at the beginning of developing and implementing these cases, has identified several faculties of agriculture in Europe; however there is still a need for more partners and individuals, who would like to write cases for FAO as well as using those materials already developed materials in their faculty. Your are most welcomed to contribute and cooperate in this activity!

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INFORMATION SOCIETY AND EDUCATIONAL INEQUALITY "THE YEAR 2000 EFFECT IN EDUCATION" - THE SPANISH CASE

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Abstract

A comparison with the computer world, where the so-called "Year 2000 Effect" will be felt very soon, is used to outline some educational problems in the Information Society. In concrete terms, we analyze the logic that underlies the repeated expansions of compulsory schooling duration by the Spanish State.

Taking as a basis the Theory of a Reduced Quality of Education which states that "The educational growth based on extending compulsory school duration creates, in an unequal society, an increase in basic education deficiencies", we analyze the different reasons that trigger the "Year 2000 Effect" in education.

Finally, we outline two alternatives to avoid or, at least, to ease the consequences of this effect in education: one is to give its real meaning to the Adult Education; the second is to stress the importance of a Recurrent Education.

A SHORT STORY

Imagine our society with the meanings and shared behaviours that shape its culture, as a high rise construction built to which everyone contributes, be it an individual or a group. Such a construction is unfinished because we build it day after day; but with an important premise: we don't build one floor after the next for, as it is rising, we are also introducing new tools to improve our capacity to build higher and higher. At the beginning, we were just building two floors at a time, later it was three by three, and so on... But the new tools – the Information and Communication Technologies (ICT) - that we use for our common work have reached a point we never expected. We are able to build at an exponential rate, increasing twofold what has already been erected until now. This may mean that if we start with one floor, we end up getting two; with already two floors, we will get four; when having four, our next work will increase to eight, and so on. Work is increasingly faster because the building feeds into itself and there is an inverse relation between its height and the elapsed time between one extension to the next one. This higher and higher "sociocultural building" does not have any elevator; it has a stairway, made of the same material as the rest of the building, in such a form it allows us - some of us better than others - to climb without having to rebuild from scratch. This educational stairway is fundamental to our cultural building because if it did not let most of us climb to reach the levels in construction - whether it is for the making of one wing, the fixing of windows or the tiling of bathrooms - we will not be able to contribute to their making, and we will be largely dependent upon those few ones who have been able to climb, thanks to their knowledge of the new construction tools. If the stairway objective is to allow the vast majority of the population access to higher levels, it must provide them with the same tools as anybody else. Everyone participating in the construction must know these tools and how to use them. Otherwise, the ascending rhythm will not be quick enough becoming in fact a "relative descent". The ascending rhythm being slower than the building construction rhythm, we may end up in an inferior position. The building is built very quickly. Imagine now that we only need one educational step for each sociocultural floor. Since the beginning of the ICT, since the new tools have been used, guess how many steps should our building need after fifty extensions. The moral of the story lies in the fact that if there are many floors, the educational stairway will have to build itself well and fast... If instead of guessing, we try to count the number of educational steps we need, it probably will be very different from the one we offered at the beginning. Although we assumed it was a large number, it is rather possible, according to our hypothesis, that the sociocultural building needs less than 2,251,799,813,685,250 steps. An almost unpronounceable number, and an exhausting task when one has to climb that stairway without getting any help! At this point we have to confess that all arithmetical operations from which we have achieved the previous result have been carried out with the help of a calculus table; otherwise it would have been a daunting exercise. If anyone wants to have a look at the intermediate calculations they are, at the moment, available on our Web page at www.arrakis.es\~joseba\.

Checking if the stairway is building itself in a proper and fast way still remains to be seen.

REALITY

According to a Gartner Group's study [Fernández Lozoya, 1995] it appears that a vast majority of commercial computer applications - an estimated 90% - will fail as soon as 1999 except for those with previous corrections. But since 1996 20% of large computers programs have already shown problems.

This staggering fact is not the result of any terrible computer virus nor is due to any other complex problem that most of us cannot comprehend because of our "rudimentary computer literacy". The astonishing part of the problem - the truly significant one for our case - is the simplicity of the statement which has been in front of us, never realized until the magnitude of the problem became obvious. The plot is unfolding; within two years, most computer programs from all over the world will not be operative any more, since they only make calculations with each year's two final digits. Therefore, by year 2000, many computer programs will misread all dates. This is the "Year 2000 Effect". One can allege we still have a two-year grace period for such an outcome to happen and, in Computer Science this is an eternity. But, as one also knows "computer housekeeping" is not so simple because programs which design forecasts, budgets, and insurance plans or plan resources for the medium term, let say four years, have become obsolete since 1996. The cause rests on the simple logic that many programs are based on the assumption that "the bigger the number, the later the date". But this logic does not hold as far as "1996" is concerned because "96", for our case, will appear as a later date to "2001" or"01" in programs whose obsolescence draws near. It is obvious that "96" is a bigger number than "01".

Because we followed this erroneous logic it will cost us around 600,000 billion dollars to make the correction; and it is better not to imagine the amount in pesetas.

But, what can we say about the costs of using a similarly erroneous logic in Educational Policies? Obviously we are referring to the principle which claims that extending compulsory schooling will generate an unfailing reduction of basic education deficiencies.

This idea comes from an adapting pattern linked to the traditional vision of modernity that considers school as an indefinitely flexible frame to answer new sociocultural needs. But the most interesting aspect is that neither genealogical nor postmodernist focuses are able to overcome such an inertia. Furthermore it has the support of important social sectors which await that the numerous school system reforms meet social demands [Giroux, 1992; Colom, 1994].

What are these social demands? Technological and scientific advance never seen before, new ways of production, a society where development is supported by generating, possessing and distributing information more than by exchanging products, consequently space and time co-ordinates lose their old significance... All these aspects imply revolutionary changes in all facets of our lives, according to what Masuda called the Information Society [Masuda, 1984].

The White Paper on Education and Training: Teaching and Learning. Toward a Cognitive Society [European Communities Commission, 1995] points out to the triad "Information Society (IS) - Globalization - Scientific and Technical Civilization" as the three engines or factors of transformation taking place in our society. These are challenges to which education must give an appropriate answer to be able to guarantee the European transition toward the cognitive society. In the Information Society, education faces the new social reality.

It is widely recognized that knowledge constitutes the most important variable in explaining new forms of social and economic organization. It is an understatement to say that information, knowledge and the ability to produce and manage both of them will be the fundamental resources for society and people alike. Education, understood as the activity through which knowledge is produced and distributed, implies, therefore, a historically unpublished and urgent importance [Tedesco, 1995]. According to us, it is particularly pressing, the speed of producing and distributing knowledge, due to the information and communication technologies (ICT), has an exponential nature. Daily reality confirms this transformational power of information technologies. There is quite an intuitive explanation for that phenomenon as described by Miquel Barcelo's *technology multiplying factor*.

The multiplying factor in technology would lie in the number of times this technology is able to improve the function or the objective that is assigned to it. Consequently a car allows us to go from a 4 mph speed, when walking, to about 60 mph or more for a car with moderate speed. This example means, at least, a multiplying factor of fifteen - sixty divided by four, but it would be difficult to go far beyond a multiplying factor of forty. In aeronautical technology a plane reaching 600 mph has a multiplying factor of 150.

In fact, conventional technologies multiplying factors, despite their huge potentiality and transformation capacity, have relatively reduced magnitude.

The distinctive fact of modern information technologies lies on some highly superior multiplying factors approaching the million.

Computer science - an automated data processing technology - allow us to make, in a millionth of a second, calculations and operations that, otherwise, would require too much time, with extremes between a second or even days. Computer science has in fact a multiplying factor around the million.

Electronic telecommunications offer also a multiplying factor of roughly a million, since they transmit in millionth of a second; in fact optic fibre transmits at light speed. Without this transmission technology, the simplest operation would take seconds. When dividing 100,000,000 fps (light speed) by 100 fps (sound speed) we corroborate that the multiplying factor is close to the million.

For this reason, communication and information technologies (computer science plus telecommunications) can reach a multiplying factor close to a trillion. This assumption does not take into account the synergetic effect of the unavoidable conjunction of data processing computer technology and computerized electronic telecommunications parallel technology.

It is important to observe that the real impact of a technology is in the huge potentiality that lies in the information technologies multiplying factor and in the short period of time it has been developed [Terceiro, 1996].

So, with each new innovation, the Information Society knowledge experiences an exponential growth:

> "Community of communication seems to be built on a flowing time, an almost eternal present, a synchronic story that only exists - as a state - for some brief moments. Under these conditions, each handling of information, each thought, each movement generates new information which is introduced in the network modifying it [...] Knowledge, under these conditions, does not produce the class of certainties that it used to and, for that reason, it is increasingly necessary to have tools and skills to allow us to discriminate, distinguish, evaluate, be guided and, ultimately, sail among that enormous quantity of information" [Alonso, 1997, p. 130].

We know too well that the human brain intuitively predicts linear growth, but makes mistakes with exponential ones [Trejo, 1996].

Because of this lack of exponential calculation, most countries - to no one's surprise - responded to the Information Society challenge by extending the initial educational systems. This trend is emphasizing the Theory of a Reduced Quality of Education which can be summarized as follows:

> "Educational growth, based on school extension, generates, in a unequal society, an increase of deficiency in basic education" [Flecha, 1990b, p. 106].

The terrible "Year 2000 Effect" in education is latent, lurking to jump. We reached this situation, as computer specialists have, because we only keep in mind half the problem. All computer software users could easily criticize professionals because they did not use, while programming, four digits - i.e. "1998" - instead they only used the last two - i.e. "98". Let us hope that none of them nor the general population complains about us - those of us that in some way influence the march of school organization - for a similar lack of perspective.

If we don't consider compulsory schooling, basic education and literacy in their fair terms and as part of a much wider educational reality than the sum of the factors, as early as Year 2000 we will be at a crossroad quite difficult to settle. We are not "only" jeopardizing 600,000 billion dollars but rather compromising people - many people - with names and surnames, with expectations and illusions... whose hopes will be ruined by this confused logic of extending compulsory schooling as a solution to basic educational deficiencies.

Let us reconceptualize the terms "literacy", "basic education", and "compulsory schooling". It is obvious that the meaning of "literacy" is not the same one nowadays as it used to be some years ago:

> "Who is illiterate? He who cannot read and write, that is to say, he who does not know or cannot overcome – master - the alphabet [...]. If this is your answer to the previous question, you - alphabetized reader - are an illiterate in literacy and illiteracy matters" [Viñao, 1990, p. 31].

The literacy concept has changed from its absolute meaning to a functional one which is explained as follows:

> "It should be conceived in order to prepare men to carry out a social, civic, and economic function that exceeds the limits of a rudimentary literacy reduced to the teachings of reading and writing" [UNESCO, Department of Education, 1986, p. 6].

The adjective "functional" refers to the fact that literacy "depends" on skills required by a specific society for its people to be carried out appropriately in different aspects of their lives [Fernández, 1990]. The ability to adapt and dynamism that are contained in the functional literacy concept allow it to be identified with the concept of basic education, since identification is expressed in the same terms [MEC, 1989; Flecha, 1990b].

Society is changing, and it is in constant evolution so that the social system is always re-establishing a dynamic balance. As the system is changing, new forms of education should help individuals to carry out new roles [Jarvis, 1985]. On that basis society is requiring more and more knowledge, skills, and abilities for our own development and for the development of the community itself. In the Information Society the need for basic education is rising.

Ultimately logic fails us:

> "If basic education needs are rising, we should increase compulsory schooling as an answer to these social demands".

This assertion is erroneous since the current concept of basic education does not totally fit - neither fundamentally in the case of an adult population - the school environment because school cannot be the sole answer to this social demand.

As far as literacy is concerned, the transition from an absolute concept to a functional one offers two consequences:

1. The necessary level for a person to be considered literate is rising.
2. The schooling process is shattered [Giroux, 1992; Gelpi, 1990].

From the second consequence it appears that functional literacy – or basic education - applies to the whole educational system, as all institutions, aspects, processes, units... as well as their dynamic interrelation whose explicit or implicit objective, is, consciously or not, voluntarily or not, totally or partially, educational [Colom, 1982]. In addition to school as a formal educational system, not formal and informal education, giving place to a much wider system [Trilla, 1993] has to answer to social demands. This is particularly relevant when referring to Basic Adult Education.

There is no doubt that schooling improvement and extension implied an undeniable contribution to reduce absolute illiteracy to less relevant levels. But literacy functional extension reveals that school institution is unable to guarantee the realization of today's population basic demand, losing one of its most traditional and until now its most reliable recognition [PSEUB, 1989].

THE SPANISH CASE

Following the principle of extending compulsory schooling, in 1990, one of the fundamentals of the school legislation reform provided by the Law of General Regulations of the Spanish Educational System (LOGSE) was to extend compulsory schooling to the age of sixteen. This decision means two more years than the age previously established in the 1970 General Law of Education. The basis for this extension is due to the fact that:

> "The eight year compulsory and free school attendance is inferior to the prevailing school attendance in most countries where it varies between nine and ten years. More important, this extra time does not guarantee that all citizens will receive the necessary basic education required in a developed society, and as stated by the Spanish Constitution's Charter of Rights" [Ministry of Education and Science, 1989, p. 69].

Furthermore, since June 1987 the Ministry of Education and Science has been contemplating the possibility of a new extension as explained in the *Project for the Reform of the Teaching System. A Proposal for Debate* [MEC, 1987]. Its Year 2000 objective is to have 80% of the population attending school until the age of eighteen and a 30% attending University.

But the Ministry of Education and Science itself admits that in 2000 there will be some 25% of Spaniards over sixteen that will not have completed the compulsory schooling.

This percentage will be made up of a few totally illiterate people, many hardly literate, most of them being over 35 years old, and a not to be despised number of young adults who are the different types of today's school "drops out" [MEC, 1989].

Other less optimistic authors offer contrasting data, and calculate the number of people with compulsory schooling deficiencies in 2000 to be around 15,859,092 or 46.72% of the total population. Taking into account that in 1981 there were already 10,840,029 people or 38.2% with compulsory schooling deficiencies, it is obvious than one can doubt that only 25% of the population will have compulsory schooling deficiencies. If the forecasts come true, the number of people with compulsory schooling deficiencies will have grown to 5 million over the last 20 years which implies another 8% of the total population [Flecha, 1990b]. According to a 1991 Sociodemographic Poll [National Institute of Statistics, 1993], and the 1991 Population Census data [INE, 1994], this tendency had already increased because in that year there were already 13,697,837 people with compulsory schooling deficiencies [Medel, 1996].

As all data related to the Information Society effects, they become obsolete very quickly. These were Ramón Flecha's 1990 data; six years later he gives us more frightening numbers. In 2000 he calculates that there will be 19,986,716 people below the compulsory schooling level or 61.58% of the total population [Flecha, 1996].

"Basic Education" measurability is obviously much more complex than "Compulsory Schooling" measurability. As we saw before, the first term depends on changing social demands while the second depends on less changing guidelines from the Ministry of Education and Science. It is possible to find people with an appropriate basic education who have not completed compulsory schooling. We have already mentioned that, in the case of an adult population, the concept of basic education does not just depend on schooling. But the opposite situation is much more frequent; there are people who have finished compulsory schooling, and gradually increase the wider percentage of "return illiterates". Those people have acquired an appropriate literacy level but because they don't use it they constitute a new type of functional illiteracy [Rochon, 1987; PSEUB, 1989].

Although we do not forget these limitations, we can deduct the volume of people with a defective basic education from the number of people who do not finish compulsory schooling. Furthermore, if we do it this way, despite reservations, and do not consider the high number of "return illiterates" as possessing a defective basic education, we are naively optimistic.

Consequently, if extending compulsory schooling implies that the whole population with deficiencies will increase significantly, it is obvious that the more compulsory schooling is extended, the more basic educational deficiencies will increase.

The model of extended compulsory schooling generates basic education deficiencies for at least two reasons:

The Extension of Compulsory Schooling Focus on the Importance of Initial School Stages Discriminates Against the Adult Population [Giroux, 1992]

The adult population is the one who mainly suffers the change of the constant extensions in compulsory schooling, and higher school levels become defective after each new compulsory schooling extension [Larrosa, 1990].

For example, a person born in the fifties has been subjected to two new levels of educational qualification. He probably finished his basic schooling with a *School Attestation of Attendance* (Certificado de Escolaridad). After that and according to the 1970 General Law of Education, he had to obtain his *School Graduate* qualification (Graduado Escolar). These days he will probably register to obtain his *High School Graduate* diploma for Adult Education (Graduado en Educación Secundaria para Personas Adultas). As it seems logical and if allowed by the ozone hole, wars, or similar circumstances, a high majority of the adult population in this situation will live to see that, at the beginning of 2000, it will be compelled to live another period of obsolescence. As we have already seen, the Ministry of Education and Science is referring to this group of persons when it mentions the high percentage of people over 35 that will see year 2000 hardly qualified "due to these Organic Laws". The Ministry does not mention the quotation.

On the other hand we should not forget those young adults who have failed in their schooling because of increased educational demands; they will form a bigger percentage of people with schooling deficiencies.

The Extension of Compulsory Schooling Focus on the Importance of School Learning is Harmful for An Adult Population

We have already mentioned this problem when referring to the functional illiteracy people's lack of schooling and the setting of adult's learning as described in the *White Paper for the Reform of the Educational System*. The subsequent Organic Law, LOGSE, in its articles 52.3, 53.4 and 53.5, lays down the possibility of consolidating non-institutional learning through tests.

But the concrete implementation of many general principles is distorted mainly by some form of curriculum established for Adult Secondary Education because it is all but an adaptation of the design carried out for the Compulsory Secondary Education. In Congress *Adult Education: A Social Necessity* [UNED, Madrid, 1995] the uneasiness created by this fact carried out the elaboration of a *Manifesto for a Specific Curriculum for Adult Education*. The manifesto item number 9 offers a flat opposition to an adult population curriculum conceived by adapting and reducing contents and areas as they appear in the Formal Educational System curriculum. It demands, for the adult population and groups living in certain contexts, a specific curriculum that fits their formative needs.

Adult learning characteristics, specifically focused on experiences with some motivations, specific interests, and differentiating intellectual peculiarities... make us think that stressing school setting in order to solve basic education deficiencies does not only underestimate the adult population possibilities but rather collides directly against them [Martin, 1991].

Once we have considered these two reasons, we could say that these facts do not basically change the urgent demand, emphasized by both the economic and social development, for a higher level of basic education. We could also say that, when necessity does exist, we obviously should be able to find the answer in the School System. What is not so obvious, as supported in this paper, is that the solution brought is an "ad infinitum" extension of compulsory schooling as a unique, or at least, a prime measure.

Therefore,

WHAT CAN WE DO?

It is necessary to look for alternatives. At this point in our reflection we want to offer two suggestions. The first one is a basic demand; the second one is sheer utopianism, but - as it has been said so many times - utopianism is the source of progress.

FIRST ALTERNATIVE: GIVE ITS TRUE MEANING TO ADULT EDUCATION

Presuming that reforms and extension of compulsory schooling would solve the deficiency problem in basic education, the meaning of Adult Education was simply a hypothetical correction past defective schooling. It was speculated that the different reforms would produce younger generations free of deficiencies, and the public attending Adult Education, while becoming older, would disappear naturally; therefore Adult Education would not be required anymore.

When we dismantle the first axiom, the whole construction crumbles. Consequently, it is necessary to provide Adult Education with a true and complete meaning in four areas which are:

1. Job-oriented training (introduction, updating, retraining and professional knowledge refreshment skills);
2. Training oriented towards civil rights, civic responsibilities or social participation;
3. Training oriented towards personal development (creativity, critical judgement, and participation to cultural events);
4. As a basis for all areas, the current evolution of society requires more general or basic training for the adult population" [MEC, 1989, p. 192-193].

If Adult Education fulfils its true meaning, it will be time to revolutionize learning frameworks and characteristics, curriculum, adult educator's profiles, and many other aspects. But to be able to progress at once, it should be obvious that Adult Education, in a society like the present one where abilities are constantly replaced without giving the community a chance to assimilate them at an appropriate rhythm, is an essential element in the educational world. It will generate an appropriate feedback to the unstable balance that all social systems imply.

What we have said until now should not lead us in the opposite direction. If we do not take into account the unquestionable work of schooling in rudimentary literacy levels, to say that school no longer guarantees the required knowledge to the whole population in a specific social context does not mean we are advocating its obsolescence. On the contrary, it means we want to give it its fair share with the conviction that school organization is part of a wider and more complex group of social, cultural, educational and economic elements, in which it does not always have the main role. Sometimes its characteristics put school in favourable situations for specific educational actions but in other cases the latter in turn condition its own possibilities. It seems, from this perspective, that the most logical stand is collaboration by forming a true system with the rest of institutions, agents or initiatives.

If we go deeper into the idea, section 5 of the Declaration during the Third European Conference on Adult Education offers the following statement:

> "Social integration needs to constantly update knowledge to avoid repeated exclusion and marginalization patterns. It points out that there is a much wider offer of goods and social and cultural services through different institutions directed to an adult population. These actions are essential to transform the population potential expectation into a real public, to create specific opportunities, to generate an appropriate motivation and to make effective their basic civil right to education" [European Communities Commission, 1995, p. 5].

There is no easy way but we will overcome the schizophrenia caused by newspapers writings on Adult Education main principles, and we will ponder later what these principles become when reaching practice.

SECOND ALTERNATIVE: THE RECURRENT EDUCATION

More than 25 years ago, Olof Palme stamped the term of Recurrent Education with his proposal during the Fifth Conference of European Ministers of Education:

> "It is hardly possible to invest more in Adult Education without reducing, at the same time, the expansion march of youth's education (...). It is presumed that a limitation of school education, including secondary education, would hit students from lower social classes (...) therefore, the only material possibility is to reduce the growth of superior education to secondary education in order to allow adult education extension (...) after finishing higher

> education, everybody should have a job; after working for some time, they would return to school and so on (...). Recurrent education would help us built an equal society" [Palme, 1969, p. 15].

The concept of Recurrent Education implies a "Copernican turn" for the entire educational system. The inertia that has been accumulated for years, and our own way of conceiving relationship between education and work don't hold against Palme's position, which becomes utopian when it collides against rather rigid structures. But utopianism has the proverbial potentiality to overcome inequalities generated by reforms based on compulsory schooling extension.

Recurrent Education is still with us and it has inspired significant details [Flecha, 1990a]. The European Communities Commission itself in its *White Paper for Social Policies* pleads for a system that, apart from specific professional abilities, contributes to some basic knowledge, to the ability to change and to innovate and, consequently, to a basis for continuing education. It also maintains that youth leaving school are a potential development, not a hierarchically categorized "product" [European Communities Commission, 1994].

But the *White Paper on Growth, Competitiveness and Employment. Challenges and Leads to Enter in the 21 Century* better emphasizes the necessity of guiding the educational world on a different path if we want to avoid the "Year 2000 Effect" in education. Among the States members' opinions the White Paper states that teaching could be rationalized if we introduce shorter periods of general formation which would respond better to more specific needs. It also makes reference to the insufficient development of systems and special fields in continuing education. Finally, among the objectives it outlines that education in the 21st century has to guarantee both a solid basic formation and a relationship between school formation and active life [European Communities Commission, 1993].

Fundamental is the challenge and short is the time because ICT have imposed their growing rhythm on education and two years seem like tomorrow.

CONCLUSION

Against a background of trade globalization, technological innovation and economic upheaval, every society is confronted with profound changes. Spain must be prepared to cope with this situation and its education systems must help us do so.

With the emergence of the information society, we must constantly upgrade our skills and obtain new qualifications.

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CHAPTER SIX

ASSESSING THE VALUE-ADDED BENEFITS OF UNDERGRADUATE DEGREE PROGRAMS

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Abstract

A value-added approach for assessing undergraduate degree programs is presented. Monetary returns to skills and attributes of alumni from the University of Georgia's College of Agricultural and Environmental Sciences are measured. Interpersonal skills were found to provide the greatest value-added benefits for career advancement. Benefits were higher for non-business-related majors in the College. Contributions of interpersonal skills to career advancement remained constant during the study period while contributions of technical skills declined. Recommendations for revising curricula are presented.

PROBLEM SETTING

In recent years, colleges of agriculture and allied sciences have experienced major changes in student enrollments and industry clientele groups [Blank, 1988]. In response to these changes, colleges are assessing and revising their undergraduate curriculum offerings. Through curriculum reform, colleges hope to attract and retain the interests of students and provide degree programs that are marketable in the work arena. Central to undergraduate program assessment is a concern that graduates be equipped with skills and attributes demanded by: 1) students who seek to maximize the returns of their human capital investment, 2) potential employers who seek to maximize the productive potential of their employees, and 3) the larger society who seeks to maximize the social gains of public investments in education.

Though education offers both private and public benefits, this study will concentrate primarily on private monetary benefits accruing to individual students and alumni. The objectives of this study are (1) to present a "value added" approach for assessing the quality of undergraduate programs in the College of Agricultural and Environmental Sciences at the University of Georgia; (2) to identify the skills and attributes deemed important for professional advancement; (3) to examine the relative importance of skills and attributes over time; and (4) to discuss implications of these findings for undergraduate curricula.

The 1997 Southern Ag Teaching Symposium noted that "this last decade of educational reform has placed emphasis on improving the quality and accountability of programs" [McCaslin and Torres, 1993]. The Symposium also noted that the best method of improving the quality of a program is through the use of objective information to make decisions. This objective information is usually obtained through program evaluations and assessments.

Previous studies on returns to higher education in agriculture have used economic outcomes such as alumni salaries and educational outcomes such as grade point averages or academic test scores to evaluate educational program quality and performance [Broder and Deprey, 1985; Preston and Broder, 1990]. However, efforts to improve program quality must first identify and assess the value of specific courses, learning outcomes and student skills or attributes. Once these outcomes and skills are assessed, curricula can be tailored to meet the needs of students, employers and the larger society. Since students enter college with a set of skills and attributes, the analytical problem is one of identifying the added or marginal benefits of a college education. The approaches used in previous studies did not adequately address the marginal benefits to the student from obtaining various educational skills and attributes. This study will attempt to address this problem and offer a value added approach that will allow undergraduate programs to measure the marginal benefits of interpersonal skills and attributes.

LITERATURE REVIEW

Value-added indicators of educational performance have been discussed in the literature. Meyer introduced two measures or indicators that could be used for school selection and school accountability. He further identified three attributes that are vital for an indicator to adequately assess the performance of a school or educational program. A performance indicator must have or be: 1) outcome validity - the indicator must measure the type of skills demanded by society, 2) non-corruptibility - it must accurately measure the performance with respect to the outcome, (the indicator must not be influenced by outside forces) and 3) a valid measurement of school performance - the indicator must measure only the contribution of that institution to that outcome. This last attribute constitutes the basis of the value-added framework.

Previous studies have also discussed methods for measuring value added [Tracy and Waldfogel, 1997; Hamlen and Southwick, 1989]. Methods of assessing student outcomes can be divided in two basic categories:(1) regression or OLS methods and (2) survey methods. We shall begin by discussing the regression analysis.

REGRESSION METHODS

Tracy and Waldfogel [1997] used a market based approach to judge the performance of a Masters of Business Administration (MBA) program. Their main objective was to distinguish the quality of the program from the quality of the students with the goal of ranking individual MBA programs. They argued that salary was the best outcome for conducting value-added studies. Their research validated that the approach should use salary because it is measurable and the performance of a program is based on output measures rather than input measures such as teacher quality. To determine "value-added" Tracy and Waldfogel adjusted the starting and ending salaries by occupation, region and industry. The adjusted starting salary was then regressed on individual characteristics such as GMAT scores, age, prior work experience and gender. This allowed them to adjust or control for student quality. The residual of this regression was determined as the "dollar" value-added from attending the MBA program. Next, the starting salary of the job obtained after receiving the MBA was regressed on the salary that each individual had prior to entering the program. Therefore, the coefficient of the pre-MBA salary minus one represented the "premium" of obtaining education.

To determine which attributes of a program generated the highest monetary returns, Tracy and Waldfogel regressed the residuals obtained from the first value-added method on different program characteristics. The coefficient that had significant t-values were viewed as those characteristics that could be enhanced to improve program quality.

In a separate study, Hamlen and Southwick, [1989] isolated the value that a program adds to a student from the quality of the student entering the program. Hamlen and Southwick questioned whether the quality of an MBA program should be based on input measures, such as number of faculty publications; output measures, such as salaries; or value added methods. Hamlen and Southwick conducted their study on various MBA programs and developed their own ranking based on value-added. This ranking was compared to five other quality ratings. By assuming that education is a production good and that MBA graduates face a competitive labor market, Hamlen and Southwick used salary as a "market signal" for the quality of an education.

Hamlen and Southwick provided evidence that MBA programs do add "value" to their students by comparing average salaries of 56 MBA programs with student characteristics. In some cases, students coming from lower ranked programs had higher starting salaries than their counterparts from higher ranked schools. Value-added was measured by regressing salary on student characteristics such as GMAT, GPA, composite score and tuition. Regression residuals were used to measure value-added.

SURVEY METHODS

An alternative method for evaluating educational programs is the survey method. Miller, et al. [1998] conducted a study using the follow-up survey to assess the curriculum at Iowa State University. Their study argued that outcome assessment is a reliable method for measuring the career performance of alumni. Miller, et al. suggested that follow-up surveys be sent to graduates at different time intervals. In their study, the effectiveness of a curriculum that had been in place since 1973 was evaluated by alumni surveys conducted in 1981, 1986 and 1990. Students were asked questions pertaining to their current employment, their opinions of certain aspects of their education, ten skill areas, and employment history etc. Surveys were also sent to the employers of these students. The employers were asked to compare the students from the University of Iowa with other entry level workers. The graduates and the workers were to be rated on ten skill areas to determine if the graduates needed any additional training in those areas.

This study was used to make modifications to the Agricultural Systems Technology Curriculum. The study concluded that if the correct questions are posed to the student and the employer, the marginal benefit or value-added associated with education can be determined.

THEORETICAL FRAMEWORK

The value of an education or the returns to receiving an education can be described in a consumer utility framework [Schoppmeyer, 1992]. As consumers of education, students derive utility from the educational process in two ways. First, students derive utility or satisfaction from the learning process. That is, students enjoy going to college, being college students and gaining new knowledge. Second, students expect their college education to create a future stream of utility after graduation in the form of higher income or a satisfying and meaningful career. That is, individuals invest in education to increase their potential earning power and productivity [Peterson, 1991].

From the university's perspective, education can be viewed as an input of production. A university education provides students with a set of skills and attributes. Firms are eager to hire individuals possessing certain skill sets [Preston and Broder, 1990]. Firms expect college graduates to have the necessary skills and attributes and reward those skills and attributes that enhance the graduate's contributions to the firm's productivity. Although the rewards or benefits of a college education have both monetary and non-monetary components, the current study will focus primarily on the monetary returns and the contributions which these skills and attributes make to these monetary returns.

CURRENT STUDY

SURVEY AND DATA

The data for the current study were taken from an alumni survey conducted by Triangle Associates of Chapel Hill, Inc on behalf of the College of Agricultural and Environmental Sciences (CAES) at the University of Georgia. This survey was conducted as part of the College's program and planning and review efforts. Surveys were mailed to graduates of all departments in the College. A total of 2063 surveys were sent to CAES alumni who had graduated from 1987 to 1994. Of the surveys sent, 353 of the graduates responded for a response rate of 17 percent.

Of these 353 responses, 281 were found to be usable. To contrast business alumni to non-business alumni, respondents were divided into two groups: Agricultural Economics and other CAES majors. There were 89 Agricultural Economics graduates and 192 Other College graduates. The Other College graduates were from departments such as Animal and Diary Sciences, Biological and Agricultural Engineering, Crop and Soil Sciences, Food Science and Technology, Horticulture, Plant Pathology and Poultry Science. Graduates were asked questions regarding their background, their starting and current salary, what personal and scholastic characteristics were primarily responsible in obtaining their job, their perception on how the College prepared them for their starting and current jobs, the skills and attributes needed for career advancement and how well the College equipped them with these skills and attributes.

The current study used the survey method to determine the value-added of earning a degree from the College. The survey used in this study deviated from traditional studies by asking students directly how their college curriculum contributed to their career success. The questions therefore allowed for a direct analysis of the value-added to obtaining the degree. The questions in the survey were directed at individual skills and how well the college had contributed to the development of these skills. For example, alumni were asked to assess how various skills have contributed to their career success and then, how well the college helped them acquire these skills. Value-added benefits were estimated by comparing skills and salaries of alumni who thought that their CAES education had contributed to their career success to those who thought that their CAES education had not contributed to their career success.

RESULTS

General statistics of Agricultural Economics and Other College graduates are presented in tables 1 and 2. The majority of both Agricultural Economics graduates and Other graduates were employed with agribusiness-related firms. The second major employer for Agricultural Economics graduates was in the field of education; while Other graduates, entered the business sector. When compared by alumni year, the Agricultural Economics graduates more often started in public sector jobs as compared to Other graduates who tended toward the private sector. Few graduates from either group started their own business (table 3 and 4). Average starting salaries for Agriculture Economics graduates were concentrated primarily in the $20,000 and under range while average starting salaries for Other Graduates were in the $20,001 - 40,000 range (table 5). However, average current salaries for Agricultural Economics graduates appear to have more of variation in growth between the $20,001-40,000 range to the over $80,000 range. The current salary range of the Other graduates fluctuated between the $20,001-40,000 range and the $40,001-60,000 range (table 6).

Respondents were asked if their college education had contributed to their career success. Skills and salaries of alumni who said that their CAES education had contributed to their career success were compared to those who said otherwise (table 7). Of the 89 Agricultural Economics respondents, 52 believed that their college experience was useful, while 37 did not. Among the Other graduates, 128 believed that the college contributed to their current job success while 63 thought otherwise.

Respondents were asked to indicate which skills were most important to the success of their current job. These skills and their ranking are shown in table 7. Agricultural Economics graduates who indicated that the college contributed to their career success, ranked problem solving skills, oral communication, written communication and people skills as being the most important. These rankings were similar to those by Agricultural Economics graduates who indicated that the college did not contribute their career success. This group ranked people skills first, followed by oral communication, written communication and management decision skills.

For the Other Graduates category, those who stated that CAES contributed to their success ranked oral communication, problem solving, people skills, technical knowledge and written communication at the top of their list. This differed only slightly from graduates who said that their CAES education did not contribute to their success. People skills, oral communication, written communication and problem solving were ranked highly. These findings were similar to prior studies of skills deemed important by employers [Broder and Houston, 1986].

The average starting salaries of current positions held by Agricultural Economics graduates were concentrated in the $40,000 and under range (tables 8 and 9). A greater percentage (73.46%) of those who said college contributed to their career success started in the ≤$40,000 range as compared to those who said otherwise (66.67%). Differences in salary growth among the two Agricultural Economic alumni groups appeared to be small if nonexistent. These data suggest that among Agricultural Economics graduates, earnings were not affected by skills and attributes obtained from the College, suggesting that these students may have acquired these skills elsewhere. For the Other graduates category, those who said that

CAES contributed to their career success experienced a larger percentage increase in salary growth. These findings suggests that the value-added of a college education may have been greater for Other graduates than for Agricultural Economics graduates.

Finally, the study examined how the career contributions of the various skills and attributes had changed over the study period. The percentage of each alumni class who indicated that a particular skill had contributed to their career success was examined for nine skills and attributes, the results of which are shown in figures 1-3. These results indicate that the importance of oral communication skills had increased over the study period while the importance of written communication and people skills had declined slightly (figure 1). Over this same period, the importance of problem solving and teamwork skills had remained relatively constant, while the importance of computer skills had declined (figure 2). The greatest declines in importance were found for knowledge of production agriculture, knowledge of environmental and natural resources and technical knowledge (figure 3). This is not to say that these types of knowledge are not important to career advancement, rather they tend to contribute less to career advancement than interpersonal skills. These findings also suggest that some skills and attributes learned in college may degrade or become obsolete after graduation. Also, some skills may be learned more effectively before college or outside the college setting.

DISCUSSION

The findings of this study suggests that a college education is likely to have a differential impact on students and alumni. Students enter college with a basic set of skills and attributes. The value-added benefits of attending college may depend upon the extent which the college education builds upon these skills and attributes and the type of job taken after graduation. This paper found that skills and attributes differed in their contributions to career success and that the relative contributions of these skills and attributes change over one's career. In particular, interpersonal and communication skills were found to make the greatest contributions to career success while technical knowledge skills were of lesser importance. From a curriculum perspective, these findings suggests that colleges of agriculture would be wise to incorporate interpersonal/communications skills in their programs of study. These skills can be taught in specialized communication courses or be incorporated into existing subject matter courses as group projects, class presentations, and other interactive teaching/learning activities. Opportunities to build interpersonal/communication skills outside the traditional classroom should also be explored. For example, leadership development activities, service learning projects or studies-abroad programs may enhance these sets of skills.

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TABLE 1
GENERAL STATISTICS OF AGRICULTURAL ECONOMICS ALUMNI FROM THE COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF GEORGIA, 1987-94

	Frequency	%
Total Number	89	100.00
Number of Men	71	18.39
Number of Women	16	81.61
MS Recipients	13	14.60
Family Background		
Urban	36	40.44
Suburban	22	24.71
Rural Non-Farm	27	30.33
Rural Farm	3	33.70
Employer	Starting job (%)	Current job (%)
Agribusiness	28.08	28.08
Business (Non-Agribusiness)	14.60	12.35
Farming/Ranching	3.37	3.37
Manufacturing	7.86	7.86
Resource Management	1.12	--
Education	13.48	13.48
Research	4.49	5.62
Agric. Service Provider	3.37	4.49
Other	15.73	16.85

TABLE 2
GENERAL STATISTICS OF OTHER MAJORS FROM THE COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF GEORGIA, 1987-94

	Frequency	%
Total Number	191	100.00
Number of Men	133	69.63
Number of Women	57	29.84
MS Recipients	25	13.08
Family Background		
Urban	48	25.13
Suburban	39	20.41
Rural Non-Farm	92	48.16
Rural Farm	11	5.75
Employer	Starting job (%)	Current job (%)
Agribusiness	13.61	10.47
Business (Non-Agribusiness)	12.04	13.61
Farming/Ranching	5.75	2.69
Manufacturing	8.37	8.37
Resource Management	2.09	2.61
Education	6.28	9.92
Research	7.85	8.37
Agric. Service Provider	5.75	4.71
Other	27.22	29.84

TABLE 3
STARTING JOBS OF CAES ALUMNI FROM UGA BY SECTOR OF EMPLOYMENT

		Public Sector		Private Sector		Self-Employed	
Alumni Class	Freq (n)	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors
		(%)					
1987	41	52.90	41.66	35.20	50.00	11.76	8.30
1988	38	45.45	29.62	54.54	59.25	0.00	11.11
1989	40	25.00	14.28	58.33	78.57	8.30	7.14
1990	33	12.50	32.00	87.50	64.00	0.00	4.00
1991	24	16.66	11.11	83.33	88.88	0.00	0.00
1992	26	22.22	26.66	77.77	60.00	0.00	6.00
1993	44	30.70	29.03	69.20	67.74	0.00	0.00
1994	36	7.69	26.08	69.23	56.52	15.38	8.69

TABLE 4
CURRENT JOB OF CAES ALUMNI FROM UGA BY SECTOR OF EMPLOYMENT, 1987-1994

		Public Sector		Private Sector		Self-Employed	
Alumni Class	Freq (n)	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors
		(%)					
1987	41	29.41	41.66	52.94	50.00	17.64	8.30
1988	38	54.54	37.03	27.27	55.55	18.18	7.40
1989	40	25.00	25.00	58.33	57.14	8.30	14.28
1990	33	12.50	44.00	87.50	48.00	0.00	8.00
1991	24	33.33	66.66	50.00	22.22	16.66	11.11
1992	26	22.22	40.00	77.77	40.00	0.00	20.00
1993	44	23.07	29.03	69.20	67.74	7.69	0.00
1994	36	7.69	21.73	69.23	56.52	15.38	13.04

TABLE 5
RANGES OF STARTING ANNUAL SALARY OF CAES ALUMNI FROM UGA, 1987-1994

		Under $20,000		$20,001 - 40,000		$40,001-$60,000		$60,001-80,000		Over $80,000	
Alumni Class	Freq (n)	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors
		(%)									
1987	41	43.75	57.69	52.94	23.07	0.00	15.38	0.00	3.84	0.00	0.00
1988	38	45.45	37.03	36.36	55.55	18.18	3.70	0.00	0.00	0.00	0.00
1989	40	50.00	32.14	41.66	64.28	8.30	3.57	0.00	0.00	0.00	0.00
1990	33	50.00	40.00	41.66	60.00	8.33	0.00	0.00	0.00	12.50	0.00
1991	24	40.00	38.88	60.00	61.11	0.00	0.00	0.00	0.00	0.00	0.00
1992	26	44.44	33.33	44.44	66.00	11.11	0.00	0.00	0.00	0.00	0.00
1993	44	30.76	32.25	69.23	54.83	0.00	9.67	0.00	0.00	0.00	0.00
1994	36	23.07	50.00	76.92	60.86	0.00	8.69	0.00	0.00	0.00	0.00

TABLE 6
RANGES OF CURRENT ANNUAL SALARY OF CAES ALUMNI FROM UGA, 1987-1994

		Under $20,000		$20,001 - 40,000		$40,001-$60,000		$60,001-80,000		Over $80,000	
Alumni Class	Freq (n)	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors	Agr. Econ.	Other Majors
		(%)									
1987	41	0.00	0.00	29.41	38.46	47.05	34.61	5.88	19.23	17.64	0.00
1988	38	0.00	3.70	45.45	25.92	27.27	62.96	3.70	0.00	0.00	0.00
1989	40	16.66	0.00	33.33	50.00	33.33	32.14	16.66	10.71	0.00	7.14
1990	33	12.50	8.00	0.00	56.00	25.00	24.00	37.50	4.00	12.50	4.00
1991	24	0.00	16.66	33.33	22.22	33.33	38.88	0.00	11.11	16.00	11.11
1992	26	0.00	0.00	69.23	80.00	23.07	20.00	11.11	0.00	0.00	0.00
1993	44	0.00	16.12	66.66	45.16	22.22	22.58	0.00	3.22	7.69	6.45
1994	36	0.00	17.39	69.23	52.17	30.76	21.73	0.00	0.00	0.00	1994

TABLE 7
RANKING OF PERCEIVED CONTRIBUTIONS OF COLLEGE SKILLS TO SUCCESS IN CURRENT JOB

	Agr. Economics		Other Majors	
Skills (Ranked by Alumni)	CAES Contributed	CAES Did Not Contribute	CAES Contributed	CAES Did Not Contribute
Total number of Alumni	52	37	128	63
	- - - - - - - - - - - - - - - -	- - - - - - - - Ranking	- - - - - - - - - - - -	- - - - - - - -
Oral Communication	2.0	2.0	1.0	2.0
Written Communication	3.5	3.5	5.0	3.5
Problem Solving	1.0	5.5	2.5	3.5
People Skills	3.5	1.0	2.5	1.0
Management Decisions	5.5	3.5	7.0	7.0
Working with Professionals in Other Fields	7.0	7.5	8.0	8.0
Computer Skills	5.5	5.5	6.0	5.0
Knowledge of Agriculture and Food Production	11.5	12.5	11.0	13.0
Knowledge of Environment and Natural Resources	11.5	9.0	9.0	10.0
Technical Knowledge	8.0	7.5	4.0	6.0
Public/Private Resource Management	10.0	10.5	10.0	9.0
Starting My Own Business	9.0	12.5	13.0	12.0
Influencing Public Policy	13.0	10.5	12.0	11.0

TABLE 8
STARTING AND CURRENT SALARY RANGES OF AGRICULTURAL ECONOMICS ALUMNI, 1987-1994

Perceptions of		$40,000 & Under		Over $40,000	
Ag. Econ. Alumni	freq.	Starting	Current	Starting	Current
		-------------------	-----(%)-----	-------------------	
CAES Contributed	52	73.46	50.00	26.54	50.00
CAES did not contribute	37	66.67	47.22	33.33	52.78

TABLE 9
STARTING AND CURRENT SALARY RANGES OF OTHER ALUMNI CAES ALUMNI, 1987-1994

Perceptions of		$40,000 & Under		Over $40,000	
Other Majors' Alumni	freq.	Starting	Current	Starting	Current
		-------------------	-----(%)-----	-------------------	
CAES Contributed	128	69.67	47.96	30.33	52.04
CAES did not contribute	63	69.84	66.67	30.16	33.33

FIGURE 1
THE IMPORTANCE OF ORAL, WRITTEN AND PEOPLE SKILLS TO CAREER SUCCESS

(Log Regression)

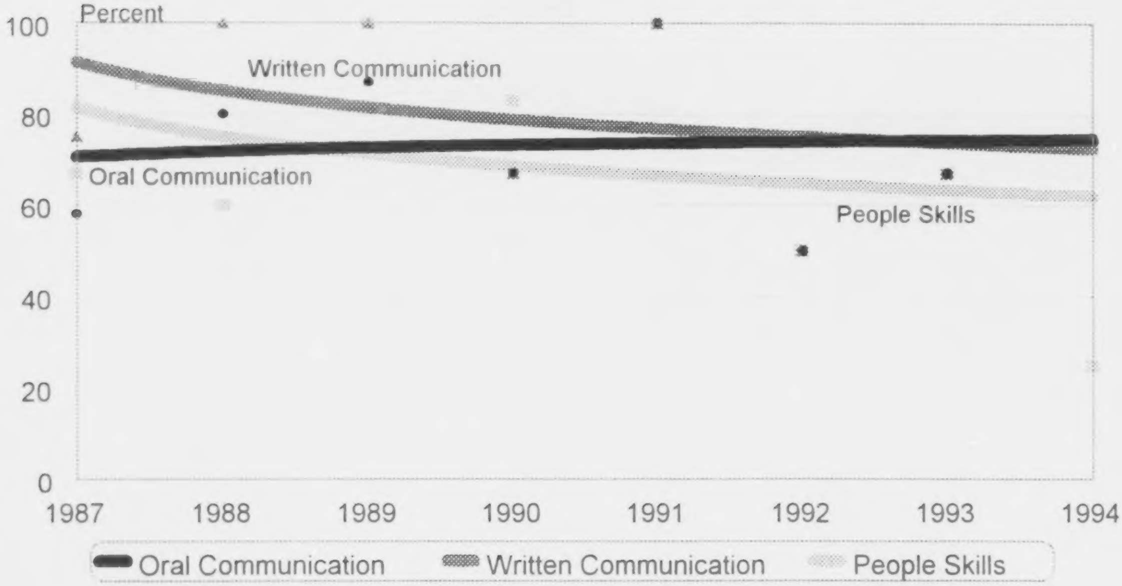


FIGURE 2
THE IMPORTANCE OF PROBLEM SOLVING, COMPUTER & TEAM SKILLS TO CAREER SUCCESS

(Log Regression)

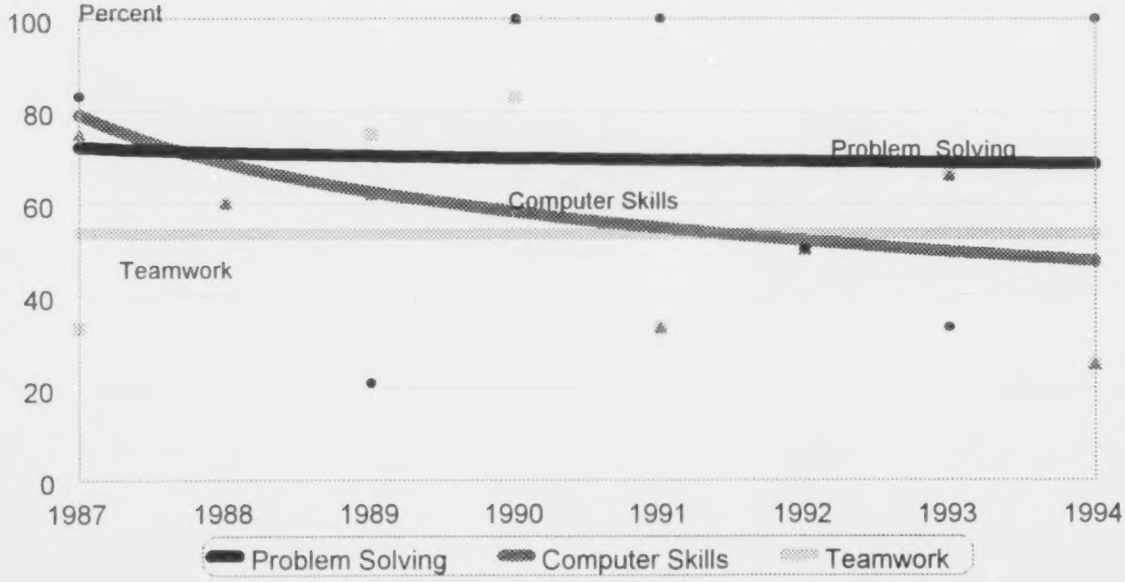
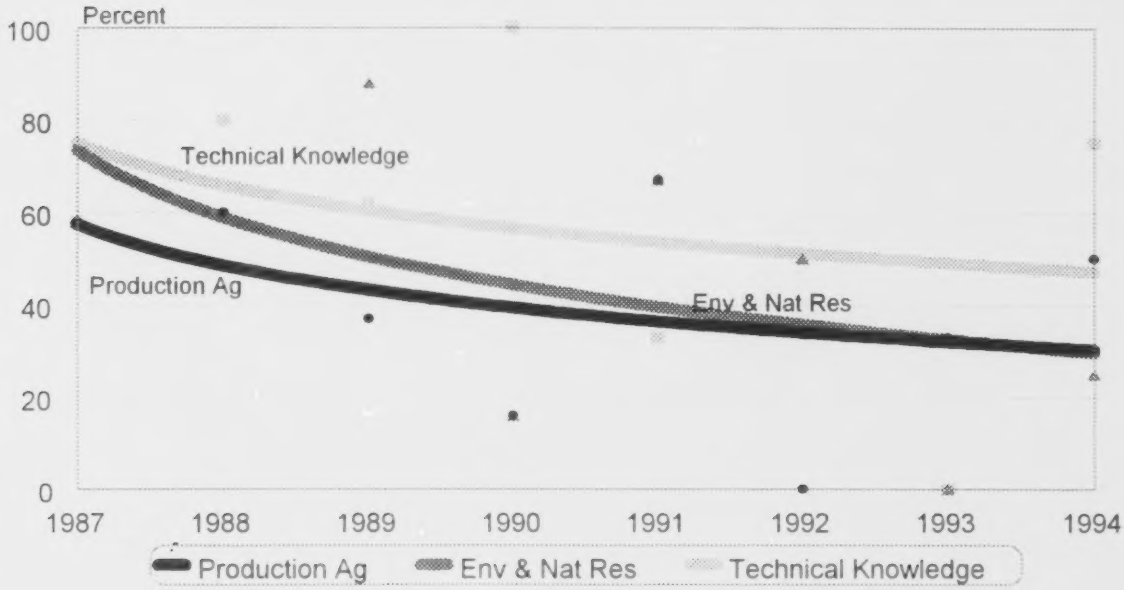


FIGURE 3
THE IMPORTANCE OF KNOWLEDGE OF PRODUCTION AGRICULTURE, ENVIRONMENTAL & NATURAL RESOURCES AND TECHNICAL AGRICULTURE TO CAREER SUCCESS

(Log Regression)



DIFFERENCES IN THE ASSESSMENT OF CASE STUDIES

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Abstract

This paper examines the ways in which case study responses are assessed. A survey of assessment approaches is used to identify which approaches are associated which various factors such as subject area and level of course. No statistically significant result was obtained, but anecdotal evidence was reported for differences based on subject and level of course.

INTRODUCTION

The case study is recognized as having a number of advantages over traditional lecture instruction. Most of the discussion of the relative merits of the case method have centred on the learning process. It is also important to bear in mind the assessment process. Following the present introduction, section two discusses some of the existing approaches to case assessment, and section three reports on a survey of faculty at Canadian business schools.

Why is this important? There is much enthusiasm for the case method, and a substantial literature exists on the writing of cases, and the case process in the classroom. By contrast, the topic of assessing the students is sparsely treated in the literature. This is a serious omission.

HOW IS A CASE ASSESSED?

A wide spectrum of case assessment approaches exists, ranging from the totally hands-off approach of no assessment, to a detailed point by point comparison against a marking key. (Parkinson, 1997, discusses this at greater length). There is a general agreement amongst writers on case studies that assessment is a serious issue: if nothing else, it represents a great committment of instructor time. As far as the detail of how assessment is carried out, however, there is very little written (Erskine et al, 1981, p7, p189-191; Ewell, 1988 Fredrikson & Pratt, 1995, p231). While there may not be formal published analyses of case response assessment, it is clear that instructors have their own methods, and that these can be in a written format:

> "In those institutions where case report writing is a formal programme requirement, extensive manuals have been developed to explain expectations, presentation format, typing instructions, submission rules, word limits, etc.
>
> *(Erskine et al, p217)*

They go on to give two examples (one from New Zealand, one from Hawaii) of assessment structures, as well as some reported interviews.

What is perhaps more telling in this context is the lack of discussion of assessment in places where it might be expected. McNair, for example in "The Case Method at the Harvard Business School" is virtually silent on the topic. There is a chapter entitled "Written Analayses of Cases", but it mostly consists of an actual case, and its solution. There is no discussion of how to assess a written response (McNair, 1954). More recently Barnes Christensen and Hansen in "Teaching and the Case Method" fail to address the issue in their book of educational cases (Barnes et al, 1994).

It is difficult to understand why so little has been written on this topic. Maybe it is not an issue. Perhaps all case assessment is identical or, if not identical, sufficiently similar as to represent minor variations on an underlying unified theme. This could be the case if there were general agreement about the objectives being pursued, and the means of achieving them. Alternatively, real differences could exist in case assessment.

This paper is motivated by a desire to discover what, if any, differences in case assessment exist and what independent factors they are associated with.

Probably the clearest signal that this is a real issue comes from students. In the writer's experience, when teaching a case-based course, one of the first question students have is a request for a detailed description of the way the instructor expects the case response to be presented. Where students have had experience of other case-based courses they are likely to respond with comments to the effect that the instructor's expectations are different from the expectations of other instructors.

Possible sources for this perception would include the following:

there really is no difference, but the student has misinterpreted the situation;
there are differences between the instructors;
there are differences between courses related to the level of the course;
there are differences between courses related to the subject area being taught.

THE QUESTIONNAIRE

In order to address this issue a short (2 page) questionnaire was sent to all the administrative studies faculty teaching in three units in two Canadian universities. The questions asked focussed on the following:

the percentage of case based teaching, analysed by subject area;
the percentage of marks allocated to different sections of the case study response;
which areas respondents thought most problematical for students;
the source of the respondents' case expertise;
whether or not respondents thought that case responses should be different between subject areas;

All the above were measured on numerical scales. Additionally, respondents were encouraged to add written descriptions to their answers.

A total of 164 questionnaires were sent out, and 41 were returned, for a response rate of 25.0%. Due to the small numbers it was not possible to make any statistcally justifiable inferences about differences between the three sites, so the data were pooled

RESULTS

The first question asked the extent to which teaching was case-based, analysed by subject area(table 1):

TABLE 1
PERCENTAGE OF TEACHING WHICH IS CASE-BASED:

	Number of Responses	Range %	Average %	Rank
Accounting/auditing/tax	13	5 - 80	43.75	4
Computing/information systems	2	20 - 60	30.00	9

Economics	2	0 - 20	10.00	12
Finance	6	0 - 40	23.33	10
Human resource management	4	20 - 40	35.00	6
Law	1	50	50.00	2=
Management science/op. research	2	0 - 40	20.00	11
Marketing	5	0 - 40	34.00	8
Organizational behaviour/management	9	0 - 60	34.44	7
Strategic management	10	20 -100	63.00	1
Statistics	2	40 - 60	50.00	2=
Other courses	6	20 -100	40.83	5
Average	62		36.20	
(n>41, due to multiple responses)				

There are few surprises in table 1 though it may be considered somewhat remarkable that accounting and related areas, which are conventionally seen as occupying the mechanistic end of the educational spectrum, feature 4th on the list at 43.75% of case-based teaching. The subject area which is most heavily case-based is strategic management, at 63%, followed by law and statistics at 50%. (The example of a marketing course without cases was explained by the respondent: students did the entire course based on dealing with the marketing issues of a real-life company, and the respondent did not consider this to be a case in the sense of a pre-prepared, scripted case. By contrast, in an Environment & Business course, where students wrote research cases based on actual data, the respondent described this as a 100% case-based course).

The written comments made in this area clearly indicated that respondents had given the isue of the extent to which courses should be case-based careful thought. Several times respondents made the point that cases were less efficient than lectures at getting new material across, while cases were more effective in giving students the opportunity to use skills and knowledge in meaningful ways. As a result, case-based teaching was typically a lower proportion in introductory courses, while upper level courses tended to have a greater case content. (Unfortunately the questionnaire did not capture this effect numerically). There were also comments about the lack of suitable case material in some subject areas (e.g. Real Estate). One respondent (in the marketing area) indicated that his courses were under constant process of evolution, and that the percentage which was case-based would be from 10% to 80% at any various times.

Together this provides some evidence for different levels of case-based teaching as a result of subject area, course level, and individual instructor differences.

The next numerically based question asked about the awarding of marks to different parts of the case response.

TABLE 2
PERCENTAGE OF MARKS AWARDED TO EACH SECTION OF A CASE RESPONSE

	Range	Average
Introduction	0 - 13%	6.42%
Problem identification/statement	10 - 27%	15.00%
Analysis	5 - 70%	28.00%
List of alternatives	0 - 27%	13.34%
	Range	Average
Recomendations	5 - 30%	13.82%
Implementation	0 - 30%	12.12%
Presentation of written report	0 - 30%	10.23%
Presentation of oral report	0 - 40%	9.40%
Other	0 - 40%	3.33%

Analysis, at 28%, is clearly the highest value on this list, and is almost twice the next highest, which would be the problem identification, at 15%. There is a very high range to most of the responses, indicating a high degree of variability in the responses.

Once more the written coments are illuminative. One respondent wrote that the percentage would change over the course of the term, being concentrated on the problem and analysis early in the term, the alternatives and recommendation in the middle of the term, and the implementation at the end of the term. Another respondent commented that the weighting would depend on the nature of the case, e.g, in an undirected case, the problem statement would receive a higher percentage of the marks. If we take that comment in conjuction with the received idea that directed cases are likely to be used in introductory courses, and the higher the level of the course, the less the direction, then this is a difference related to course level. (See also the concept of the "Case Difficulty Cube", Erskine et al, 1981, p87) Another respondent could not answer the question as put, as he used a very highly directed case question method (i.e., he would set a case, then ask a very specific, narrow focus, question). Another respondent commented that he used cases in discussion format, rather than a formal assessment way. Another commented that it "varies by case and course".

As with the data in table 1, this represents some evidence of instructor difference, subject area difference, and coures level difference, all affecting the assessment process.

The next question with a numerical focus asked about the area with which students had most difficulty in a written case response.

TABLE 3:
SECTION OF THE CASE RESPONSE WHICH IS MOST PROBLEMATICAL FOR STUDENTS

	Number of Responses
Introduction	1
Problem identification/statement	6
Analysis	7
List of alternatives	5
Recomendations	8
Implementation	12
Presentation of written report	3
Presentation of oral report	1
Other	2

(n>41 due to multiple responses)

Given that table 2 above had identified the analysis as being the area with the greatest allocation of marks, it is perhaps surprising that the implementation is identified most frequently as a problem area for students. The written comments give further insight.

One respondent commented that recommendations are typically weak, and do not build on the analysis. Another commented that students frequently failed to link recommendations to analysis. Clearly both these comments are directed not so much at the individual parts, as to the cohesiveness of the report as a whole: are the parts well integrated with each other?

This issue of the whole, rather than the sum of its parts, is a recurrent theme in the section of the questionnaire which asked what respondents were looking for in a good case response. Words such as critical thinking, and clear analysis tended to reappear in different responses, and there was an overall desire to see something that made sense overall, however good its constituent parts. Evidence of critical thinking was mentioned more than once.

This is the same finding as we see in Erskine's discussion of case assessment, where respondent after respondent refers to the overall impression a written case response makes, rather than identifying any uniquely excellent feature (Erskine et al, 1981, pp188-95).

In response to the enquiry about the source of their case expertise, 17 (41%) reported that they had been on courses, 17 (41%) reported that it came from books and/or articles, 25 (61%) reported that it came from experience. As there were some non-responses in this section, these proportions are an under-reporting of the data.

While we would expect a high proportion of respondents to cite experience as a source of their case skills, the writer was surprised to see how many of the respondents had attended fromal training courses in case teaching.

The final numerical question addressed one of this paper's research questions directly: it asked whether respondents thought that there should be diffferences in case responses between subject areas:

TABLE 4
DO YOU THINK THE CASE RESPONSE SHOULD BE DIFFERENTLY ASSESSED FROM ONE SUBJECT AREA TO ANOTHER?

	Number of Responses
Yes	22
No	3
Don't know	1

Clearly the consensus is that respondents believe differences should exist, and written comments shed further light on this.

Several respondents amplified the idea that the focus of cases would differ from one subject to another. Examples would include the following: critical issues and required analysis in marketing may be different than in HR, OB or accounting; in "straight quantitative" subjects the analysis would adopt a more important role; in accounting cases there is a higher level of focus, and therefore a more specific solution is appropriate; economic statistics would have a more quantitative bent than management accounting.

In addition to the strong support for evidence of subject based differences, there were comments which referred to other aspects: one respondent commented that the level of cognitive development of students is more important, and others commented that there was as much variation within any subject as across areas.

To further investigate the differences between subject areas, some of the responses reported in table 2 were analysed according to subject area as reported in table 1. Because of the small numbers involved only those data referring to subject areas where responses were more than 15% of the total were used (accounting: 13 responses; organizational behaviour & management, 9 responses; strategic management, 10 responses). Chi squared analysis was carried out to see if differences in weighting were random or systematic. However, the small numbers make any conclusion extremely tentative.

TABLE 5
PERCENTAGES AWARDED TO DIFFERENT SECTIONS OF THE CASE RESPONSE, ANALYSED BY SUBJECT AREA

	Accounting Etc.	Organizational Behaviour & Management	Strategic Management
Introduction	6.93%	6.25%	5.00%
Problem identification	14.43%	17.50%	13.00%
Analysis	30.93%	13.25%	34.00%
List of alternatives	11.93%	14.50%	10.80%

Recomendations	13.92%	19.75%	9.80%
Implementation	9.43%	12.50%	13.80%
Presentation (written)	6.93%	8.75%	8.80%
Presentation (oral)	5.00%	7.50%	2.80%
Other	0.50%	0.00%	2.00%

χ^2 statistic = 20.99
With 16 degrees of freedom this is not significant at the 90% level

The most striking difference which are apparent from table 5 is the weighting given to analysis in accounting (30.93%) and in strategic management (34%) compared to organizational behaviour/ management courses (13.25%). That, in turn, is balanced by increased percentages awarded to other categories, such as the recommendations.

The statistical significance of these differences was assessed through χ^2 analysis. This compares the values in each cell of table 5 against the expected values, given the row and column totals. The result is that the differences are not statistically significant at the 90% level.

CONCLUSION

This paper has investigated the way in which case study responses are assessed. Evidence has been brought out that there are differences in assessment between instructors, between levels within a subject, and between subjects. A statistical test has indicated that the between subject area differences are not statistically significant.

These findings will be useful to instructors in the design of courses and in assessing case study responses.

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AN ASSESSMENT OF FACULTY PERCEPTIONS: FACULTY DEVELOPMENT NEEDS TODAY AND IN THE TWENTY-FIRST CENTURY

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Abstract

This paper investigates the impact of technology on education and the concomitant training needs of professors as we move into the twenty-first century. Faculty perceptions are measured for four important areas (methods and techniques, technology, environmental factors, and people and training factors). Additionally, the role of professors and the promotion and tenure system are studied.

INTRODUCTION

The speed at which technology is changing is creating challenges and opportunities for the learning environment of today and tomorrow. Much speculation has resulted about the environment in which these challenges and opportunities will take place. The literature indicates four major areas capture the essence of the future teaching/learning environment [Schneiderman et al, 1998; Riley et al, 1994]. These areas include teaching methodologies, technological factors, environmental factors, and human factors.

The literature supports the use of many of the same methodologies for teaching/learning used today [Thompson, T., 1998]. These methods include case studies, experiential learning, and outcome-based learning. While many of the methods may remain the same, delivery methods may change.

Warnings abound about the danger of technology as an end in itself. Computing and communication technologies can be used to enhance learning. Additionally, networking facilitates the integration of complementary disciplines. Therefore, technology may play either a negative or a positive role depending on its use or the emphasis placed on it by the educator.

Environmental scenarios proposed in the literature indicate a learning environment devoid of human interaction. The benefits of computer based learning include the elimination of the classrooms and a change in the role of the educator from lecturer to facilitator. Other scenarios paint dire pictures of education without human interaction and its social implications.

In order to operate in the future, support personnel will become vital to the educator. Educators will require constant updates in technical areas as well in their disciplines. Universities will have to provide the resources to maintain updated faculty members and facilities.

The focus of this exploratory study was to determine the vision of the faculty members of a large, public northeastern university. This university's primary mission is that of a teaching/learning organization. The student body is a combination of day and evening students with different preparation levels. A preliminary questionnaire was developed incorporating the four major areas identified in the literature. A survey instrument was then developed from the preliminary questionnaire results.

METHODOLOGY

A convenience sample of faculty members judged to be on the cutting edge of technology or education was selected to complete a preliminary questionnaire. The preliminary questionnaire was designed to ascertain future needs of the business school. The participants were asked to image themselves working and learning in the year 2020. They were then asked to describe the following methods, environments, and activities in the year 2020: (1) teaching methods used in universities, (2) classrooms, (3) office and work environment, and (4) professional and service activities. Additionally, the participants were asked to list the technologies they would use in the environment of the future.

From the results of this initial survey, a questionnaire was developed reflecting the major categories identified through content analysis. These major categories were:

1. Methods and techniques
2. Technology
3. Environmental factors
4. People and training factors

Additionally, the questionnaire contained items pertaining to the role of professors and items important in their development and promotion. Also, demographic data were gathered. The instrument was distributed to all faculty members (42) for completion.

For each of the major categories, faculty members were asked to respond to a list of items. For each item, respondents were asked the item's importance today and in the year 2010. The scale for each item was a 7 point with a neutral point of 4. The scale ranged from 1 (not important) to 7 (most important). Additionally, participants were asked if they would like to have training in that item with three options given (yes, maybe, no).

Frequency counts were tabulated for all items and a comparison of present and future needs within major categories was made. The scale was collapsed from a 7-point scale to a 3-point scale to facilitate understanding.

FINDINGS

The respondents were composed of 25% accounting, 18% finance, 21% management, 14% management information systems, and 21% marketing. The population surveyed was 43. Twenty-eight completed questionnaires were returned and analyzed.

The findings are report by major categories including methods and techniques, technology, environmental factors, and people and training factors (Tables 1-4). Comparison of items within the methods and techniques category indicate that all items increased in importance over time (today and by the year 2010) with the exception of lecture and discussion. Comparison of items within the technology category indicates that all items increased in importance over time with the exception of computer/PC, which remained the same. This can probably be explained by the increase expected in notebooks/ laptops and sub notebooks by the 2010. Comparison of items within the environmental factor category indicates that all items increased in importance over time. Comparison of items with the people and technology category indicate that all items increased in importance over time with the exception of clerical help/staff and adequate faculty for program needs. Clerical help/staff went down whereas adequate faculty for program needs remained the same.

TABLE 1
METHODS AND TECHNIQUES

	Today			*By 2010*			*Would you like to see training in this area?*		
Methods and Techniques	**Disagree**	**Neutral**	**Agree**	**Disagree**	**Neutral**	**Agree**	**Yes**	**Maybe**	**No**
Lecture	7%	11%	82%	25%	7%	64%	11%	14%	50%
Team /Group Learning	8%	18%	68%	11%	7%	78%	32%	21%	29%
Interactive Learning	8%	21%	68%	0%	4%	93%	36%	29%	18%
Experiential Learning	4%	18%	75%	0%	14%	83%	29%	32%	21%
Outcome-based Learning	8%	25%	64%	0%	11%	86%	32%	32%	14%
Discussion	7%	18%	75%	8%	14%	79%	14%	25%	39%
Problem Solving-Knowledge and Skills	0%	4%	97%	0%	0%	97%	29%	25%	21%
Team Teaching	40%	21%	36%	15%	14%	64%	21%	36%	21%
Presentations	14%	21%	61%	8%	21%	64%	11%	25%	36%
Debate	32%	36%	25%	29%	25%	39%	18%	18%	36%
Computer-based Instruction	15%	29%	57%	4%	7%	90%	43%	18%	18%

TABLE 2
TECHNOLOGY

	Today			*By 2010*			*Would you like to see training in this area?*		
Technology	**Disagree**	**Neutral**	**Agree**	**Disagree**	**Neutral**	**Agree**	**Yes**	**Maybe**	**No**
Chat Rooms	64%	21%	11%	28%	25%	42%	18%	25%	32%
Bulletin Boards	46%	29%	22%	25%	21%	50%	18%	21%	39%
Multi-media	47%	14%	36%	12%	7%	79%	39%	21%	14%
Internet and the WWW	11%	7%	78%	4%	4%	93%	46%	11%	18%
Computers/PC	8%	18%	75%	4%	14%	82%	29%	21%	21%
Virtual reality	58%	14%	25%	25%	14%	58%	50%	14%	21%
Teleconferencing	61%	14%	18%	12%	11%	67%	64%	14%	7%
Intelligent Agents – smart programs that carry out specific, repetitive tasks; e.g. software acting as a filtering device for electronic mail	42%	18%	29%	4%	14%	71%	43%	29%	4%
Notebook/Laptop Computers	36%	21%	36%	8%	7%	82%	25%	29%	18%
Sub Notebook	43%	21%	22%	15%	14%	54%	25%	18%	21%
Computer Analysis – statistics	25%	25%	50%	12%	14%	75%	39%	14%	25%
Software	11%	11%	78%	4%	7%	90%	25%	21%	21%
E-mail	11%	14%	75%	4%	11%	85%	14%	11%	43%

TABLE 3
ENVIRONMENTAL FACTORS

	Today			*By 2010*			*Would you like to see training in this area?*		
	Disagree	Neutral	Agree	Disagree	Neutral	Agree	Yes	Maybe	No
Environmental Factors									
Connection in class for portable computers	40%	25%	32%	4%	0%	92%			
Large Wall Projection	18%	21%	57%	4%	4%	90%			
Tiered Classrooms	39%	29%	29%	29%	25%	43%			
Computerized Networked Classrooms	25%	29%	43%	11%	11%	75%	43%	4%	25%
Virtual Learning Environments	50%	25%	22%	12%	14%	71%	57%	4%	14%
Clean Space-classroom and work	18%	7%	71%	11%	7%	79%			
Regular computer and component updates	7%	14%	71%	4%	7%	82%			
Fully Equipped Classrooms	11%	7%	78%	0%	4%	93%			
Chalkboard/White boards	15%	18%	65%	8%	14%	75%			
Competency Testing	25%	14%	57%	8%	7%	82%	43%	14%	14%
On-Line Testing	47%	25%	25%	18%	7%	72%	29%	25%	14%
Virtual offices and meetings	47%	25%	25%	15%	11%	72%	34%	18%	7%
Portable Equipment – phones, computers	22%	32%	39%	0%	14%	78%			
Hoteling – reserving office and equipment as needed; other times working off campus	46%	25%	18%	22%	21%	46%			

TABLE 4
PEOPLE AND TRAINING

	Today			*By 2010*			*Would you like to see training in this area?*		
People and Training Factors	Disagree	Neutral	Agree	Disagree	Neutral	Agree	Yes	Maybe	No
Qualified personnel	4%	7%	82%	0%	7%	89%			
Web Development Assistance	29%	21%	43%	14%	14%	65%			
Technology Training	4%	21%	72%	4%	0%	85%	71%	14%	0%
Software Training	7%	25%	68%	4%	7%	85%	64%	25%	0%
Faculty reassign time	7%	11%	82%	7%	4%	90%			
Technology Support People	8%	4%	85%	0%	0%	97%			
Technical Assistance – computer grading	28%	29%	36%	18%	25%	50%			
Travel Money and assistance	4%	7%	85%	4%	7%	86%			
Clerical help/staff	4%	4%	89%	4%	7%	85%			
Adequate Faculty for Program needs	4%	4%	85%						

In comparing the role of the professor today and in the year 2010, the findings indicate that the role of the professor as facilitator, tutor, expert, and role model increased slightly in importance over time. The role of the professor as lecturer and mentor decreased in importance over time (Table 5).

TABLE 5
THE ROLES OF PROFESSORS

	Today			*By 2010*		
	Not Important		*Most Important*	*Not Important*		*Most Important*
Facilitator	4%	14%	82%	4%	7%	90%
Lecturer	7%	11%	82%	18%	14%	67%
Tutor	21%	36%	43%	18%	36%	46%
Mentor	11%	4%	93%	8%	11%	83%
Expert	0%	18%	83%	0%	11%	89%
Role Model	11%	11%	79%	4%	14%	82%

In assessing the importance of teaching, service, and research in the professor's development and promotion, teaching and service remained the same in importance over time while the importance of research increased slightly over time (Table 6).

TABLE 6
IMPORTANCE TO A PROFESSOR'S DEVELOPMENT AND PROMOTION

	Today			*By 201*		
	Not Important		*Most Important*	*Not Important*	*Most Important*	
Teaching	4%	0%	93%	0%	4%	93%
Service	33%	11%	50%	36%	7%	50%
Research	7%	18%	72%	8%	14%	75%

Training needs within categories were reviewed. Items within categories are reported as needing training if 33% or more of the faculty members indicated a desire for training. Items that did not require training are also indicated when 33% or more of the faculty indicated no desire for training.

Three items in the methods and techniques category were identified as needing training (Table 1) These items were team/group learning, interactive learning, and computer-based instruction. The items in methods and techniques that did not require training were lecture, discussion, presentations, and debate. In the second major category, technology (Table 2), training was desired in multi-media, internet and the WWW, virtual reality, teleconferencing, intelligent agents, and computer analysis-statistics. Technologies that did not warrant training were chat rooms, bulletin boards, and e-mail. In the third category, environmental factors (Table 3), respondents were asked to indicate their training needs for only five of the items (computerized networked classrooms, virtual learning environments, competency testing, on-line testing and virtual offices and meetings). The respondents indicated that training was desired in each of these areas. In the fourth category, people and training factors (Table 4), respondents were asked to indicate their training needs for only two of the items (technology and software training). These items, technology and software training, were identified by respondents as areas where training was highly desired.

DISCUSSION

Given the findings, indicating a need for continual technology and software training, the underlying assumptions of the teaching/learning paradigms need to be investigated. This requires examining how people learn and what pedagogies best facilitate teaching and learning. Caution should be taken to ensure that the various disciplines drive the technology and not vice versa.

The major categories of this study indicate focal points from which the future faculty development needs might be addressed. These categories include methods and techniques, technology, environmental factors, and people and training factors. For each of these areas, the implications are addressed below:

METHODS AND TECHNIQUES

Due to the continual evolution in the technology area, there will be a constant need for training and updating of technological skills. Although this will not affect many of the traditional methods of teaching, it may change the way we look at education. While continuing to focus on the disciplines' concepts and theories and the ability to transfer this knowledge to business, as important will be imparting to our students a love of life-long learning and the joy of education for education's sake.

TECHNOLOGY

When a student develops a love of learning, technology can enhance the learning activities. Moreover, it is important that the media does not drive the future. However, the media should provide a vehicle for expanding the foundation of a college or university education during and after graduation. The media can assist in synthesizing information and generating knowledge. It is critical that the media and software such as intelligent agents be used to avoid information overload and improve the generation of quality information.

ENVIRONMENTAL FACTORS

There will be a variety of teaching/learning environments in the 21st century. While these environments are yet to be defined, it is a certainty that computers and multimedia technologies will help define these environments. The constant evolution created by technology change will require constant updating of educators as well as students.

PEOPLE AND TRAINING FACTORS

This need for continual updating of educators requires appropriate support staff [Elsner, P., 1998]. Instead of the secretary as we know it today, we need support staff with different knowledge and skill sets. The support staff needs to be empowered to keep continually up-to-date in these knowledge and skill sets which include:

1. Networking of computer and communication technologies
2. Software knowledge and applications
3. Hardware and software support available 24 hours, seven days per week
4. Instructional technologists able to work with content specialists in the design of educational materials

For the educational materials to reflect the changing business environment, faculty members will need to continue networking with both industry and academics both in and cross disciplines [Lowe and Sasso, 1997].

ROLES OF PROFESSORS

The role of the professor will be shaped by the needs and demands of the students. Anecdotal evidence seems to support the growth of the facilitator role of faculty members and the faculty member as a coach. Still important will be the role of the professor as an expert in the field, as a mentor, and as a role model for the students. Professors will still be required to perform research and service components as well as teaching.

SUMMARY

In summary, it is evident that technology does not stand-alone. Technology provides access to information and this information needs to be accessible to all. In the future, students and educators will need to know: software, machines, protocols, and telecommunications as well as how to interact with people, think abstractly, speak well, problem solve, and perform with grace under fire.

Moreover, to cope with the environment of the 21st century, a love of learning will become a necessity. This continual learning is more accessible than ever before.

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IS THERE A DIFFERENCE IN DEVELOPING AND TEACHING CASES IN A NON-BUSINESS DISCIPLINE? CHALLENGES AND OBSERVATIONS

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Abstract

The prevalent development and application of teaching cases to the business discipline has clouded or somehow limited the use in other areas. This focus further questions the transferability of skills and learnings associated with the case discussion method to other disciplines. This paper presents the results of a survey of case authors and users, highlights efforts at case development and applications in non-business disciplines, discusses the challenges encountered and uses the conclusions to make the case for case development and discussion method for all disciplines and levels of education.

INTRODUCTION

Several proponents and champions of case research and application have background in the business education [Christensen, Erskine, Gragg]. They define teaching cases for broad application, yet the pervasive reference to management, organization, business, etc. tend to constrain this learning approach to the area. For example, Christensen(1989) defined a case as a partial, historical, clinical study of a situation which has confronted a practicing administrator or managerial group. Presented in narrative form to encourage student involvement, it provides data substantive and process essential to an analysis of a specific situation, for the framing of alternative action programs, and for their implementation, recognizing the complexity and ambiguity of the practical world. Erskine and Mauffette-Leenders[1989] defined a teaching case as reasonably complex, (it is information rich and does not gloss reality). It should provide information sufficient to allow the student to identify with the case characters, situations, and organization involved as well as to confront the intractability of situational specifics. Gragg's[1954] definition perhaps did more to limit focus of case application to business discipline. Gragg defined case-as typically a record of a business issue which actually has been faced by business executives, together with the surrounding facts, opinions, and prejudices upon which executive decisions have to depend. These real and particularized cases are presented to students for considered analyses, open discussion and final discussion as to the type of action which should be taken."

Case discussion method is credited with development of such skills as critical thinking, analytic, diagnostic, interpersonal, communication, etc. According to Lawrence [1953], a good case is the vehicle by which a chunk of reality is brought into the classroom to be worked over by the class and instructor. "A good case keeps the discussion grounded upon some of the stubborn facts that must be faced in real life situations. It is the anchor of academic flight of speculation. It is the record of complex situation that must be pulled apart and put together again for the expression of attitudes or ways of thinking brought into the classroom. The above and many more can be represented is such cases as decision-focused, illustrative, application and incident or scenario cases. These forms of cases are applicable to various discipline for purposes of achieving and integrating real world situation with theories and strategic problems.

Why then do we see limited application of case method of learning in quantitative oriented disciplines such as engineering, mathematics, accounting, Technology, etc.? What, if any, are the differences between these cases and those for business disciplines. What challenges do authors face and what are the current trends in these areas.

CHALLENGES: CONTENT AND PROCESS

A pilot study of case authors and instructors in both business and other disciplines was made to determine whether there are differences in the cases - content and process and what, if any, the challenges in the development and teaching efforts.

Thirty faculty from diverse disciplines (Technology, Economics education, Mathematics, Management engineering, Accounting, and English language) participated in the survey. All participants have had a course where case discussion method was used however, while 60% have attempted to develop a case, 20% had never and the remaining 20% have had the challenge of teaching by case method.

Most case authors indicated difficulty in organizing the case data to fit samples generated from case journals. These did not find it challenging to collect data nor interview for data collection. Identification of case project and gaining access were fairly less challenging especially for engineering and technology faculty. These faculty compared cases to project topics or problem assignments. Economics, accounting and mathematics faculty also identified problem assignments with case issue. English language and education found it difficult differentiate between a story development and the case development. Almost all the participants were able to tie their challenges to specific types of cases - decision focused case (which is predominant in management and engineering cases), illustrative cases (familiar to economics, accounting and technology) application and scenario cases although identified by others, appeared to be special domain for English language, education and mathematics faculty.

Most survey participants had never written a formal teaching note or Instructor's manual. They did not see the need, was the comments. Education and English language Instructors had what they described as detailed lesson plans. It was fairly time consuming to develop an effective one indicated the education Instructors.

The participants were unanimous in the level of challenge posed by teaching with the case method - very strong challenge - Discussions of challenge ranged from class management, preparation, to evaluation and grading of case discussion. Instructors were concerned with large class sizes, inadequate class setting, and lack of experience in teaching with cases.

RECENT OBSERVATIONS OUTSIDE BUSINESS DISCIPLINE

Increasing interest in discussion-based learning and interdisciplinary education has generated new programs with a focus on case development. The outcome is more motivated students, more stimulating classroom discussions, better prepared graduates, and a new set of grants and fundings that encourage this process. Programs such as Iowa Electronic Markets - InterDisciplinary Educational

Alliance (IEM - IDEA) (A conglomerate of four institutions and faculty from Economics, Government, Global Management); Laboratory for Innovative Technology and Engineering Education (LITEE) - (A partnership of NASA, Southern Company and Alabama A&M University, Sponsored by National Science Foundation, Auburn U. College of Engineering and College of Business, AUCNET, Mercedes-Benz and Thomas Walter Center for Technology Management); Southeast Advanced Technological Education Consortium (SEATEC) - (A consortium of five two-year colleges in Tennessee, supported by - Business and Industry partners such as MCI - Worldcom, Lockheed Martin, Time Warner Cable, Touchstone Industries, Hospitality House, etc.); and East Tennessee State University Technology Education Program (ETSU-Tech. Edu.) equally supported by Industry and businesses. The following paragraphs present overviews of SEATEC and ETSU-Tech. Edu. respectively.

SOUTH EAST ADVANCED TECHNOLOGICAL EDUCATION CONSORTIUM CASE STUDY DEVELOPMENT PROJECT (SEATEC)

This description of the SEATEC Case Study Project was abstracted from the year one annual report on the project submitted to the National Science Foundation. The project was supported, in part, by the National Science Foundation. Opinions expressed are those of the authors and not necessarily those of the Foundation.

OVERVIEW OF THE SEATEC PROJECT AND ITS GOALS

The South East Advanced Technological Education Consortium is a collaboration of five two-year colleges in Tennessee. The colleges are Chattanooga State Technical Community College, Jackson State Community College, Nashville State Technical Institute, Pellissippi State Technical Community College, and the State Technical Institute at Memphis. The SEATEC consortium promotes exemplary improvement in technical education through the design of case studies to be implemented in new curricula, instructional materials, and opportunities for faculty and teacher development. The SEATEC Consortium Case Study Development Project is also promoting and developing the use of multidisciplinary teams, which includes collaborating with business and industry. Business and industry partnering provides the means for better communication between higher education and private business for the development of the needs of business and the student by providing real-world application-based learning.

The vision for the SEATEC consortium of two-year colleges is to provide leadership for the reform of technological education through case-based instructional delivery. SEATEC will build a foundation for this vision by developing a fundamental understanding of case-based instruction in technological education. Synthesis of the best thinking and practice of experts in the field along with the established structure of the SEATEC interdisciplinary teams and industry partners will lead to the development of real-world model cases. Through development and field testing of these model cases, the impact on students will be analyzed and studied. As the implementation of case studies matures through regional and national field testing, the SEATEC model for developing and using case studies in technological education will influence students and teachers on a widening scale. An ongoing program of dissemination will inform a national constituency of educators about the development and implementation of a case-based approach to technological education.

The SEATEC vision for the short-term leads to a long-term potential that can help reform technological education through the introduction of fundamentally sound model materials and methods. At conclusion, this project will have in place a body of research-based knowledge about the development and implementation of case studies in technology and the resulting improvements in student learning. Samples and models of materials and case-based implementation techniques will provide a foundation for reform in the development and delivery of successful case-based tools for instruction.

The project has four primary goals:

Goal 1: To provide national leadership for the development and implementation of case-based instruction for technological education.

Goal 2: To provide opportunities for continuous and appropriate professional development of participating faculty.
Goal 3: To assess the effectiveness of the case study approach to teaching technology-related material in the classroom.
Goal 4: To disseminate information nationally related to the SEATEC activities, materials, and results, including outcomes of the use of case studies in field-test settings.

PROGRESS AND ACCOMPLISHMENTS

Goal 1

Forum #1 (Essential Characteristics of Case Studies in Technology) was held at Vanderbilt 1/21/99, a follow-up session with SEATEC teams was held 1/22/99. Attendance at the forum numbered approximately 120 and included members of the SEATEC campus teams, faculty from SEATEC campuses not currently members of a SEATEC team, guests from Vanderbilt University and other local colleges and universities and speakers. Invited speakers - included faculty from nationally known institutions such as Johns Hopkins, Auburn, etc.

Speakers' papers developed specifically for the forum were posted on the SEATEC web site in advance of the forum and each speaker delivered an address on the forum's primary topic (Characteristics of Case Studies for Use in Technology Classes). At the Friday follow-up session, SEATEC team members further defined the characteristics to be incorporated into the sample case studies they will develop for inclusion in the models (or kits) they are preparing as a project activity.

Knowledge Mining activity led by Vanderbilt's Learning Technology Center on the papers and topics of Forum #1 are underway at the LTC web site: http://canvas.ltc.vanderbilt.edu/kmine/SEATEC/

Forum #2 (Strategies for Using Case Studies in Teaching and Learning) was held 2/25/99, with a follow-up session for the SEATEC teams on 2/26/99. Attendance at this session SEATEC forum numbered approximately 100 and as, with forum #1, included faculty who are campus team members as well as faculty from our SEATEC campuses who are not currently team members. Other local universities and colleges were also represented.

Goal 2

Forum #1 (Essential Characteristics of Case Studies in Technology) was held at Vanderbilt 1/21/99, a follow-up session with SEATEC teams was held 1/22/99.

Forum #2 (Strategies for Using Case Studies in Teaching and Learning) was held 2/25/99 with a follow-up session for the SEATEC teams on 2/26/99.

Campus teams are developing the case study kits / models components. To date, time-lines for completion of the model components have been developed by the campus teams from Jackson State Community College, Pellissippi State Technical Community College, Nashville State Technical Institute and State Technical Institute at Memphis.

Campus in-service sessions (for all two-year college faculty) are being scheduled for four of the SEATEC two-year community colleges for the fall semester in-service schedule. These in-service sessions, sponsored by SEATEC, are campus-wide events, thus expanding the concepts of active / collaborative / problem based learning beyond our college teams. Dates set for these in-services are: Nashville State Technical Institute - August 16, 1999, Pellissippi State Technical Community College - August 17, 1999, and Jackson State Community College - September 1, 1999.

Planning is underway on the professional development team component of the SEATEC project. A planning group has begun to meet and develop a plan for delivering the professional development activities associated with our faculty development and training component of the project. The activities and delivery strategy will be finalized at the project's summer workshop.

Goal 3

A contract to conduct the assessment is in place between SEATEC and the Learning Technology Center (LTC) at Vanderbilt University (see Appendix C). This agreement calls for the Learning

Technology Center at Vanderbilt University to prepare several reports and documents for the project, including: a search of the literature covering the use of case studies in technology classes, written procedures for conducting field tests of case studies developed by SEATEC, criteria for evaluating case studies based upon field tests, an assessment of progress on the development of the case study models, and an assessment of the effectiveness of the case study approach to teaching technology material in SEATEC classrooms.

The original 25 case studies developed under the earlier Tennessee Exemplary Faculty for Advanced Technological Education grant are being prepared for print. Drafts of the cases will be printed and also posted on the SEATEC web site for the review of the team members who authored them. A revised plan for developing the field testing procedures, evaluation criteria, and for actually field testing cases will be developed jointly with the LTC later during the spring (1999) semester.

A national advisory committee has been established to advise and consult with the management team of SEATEC in order to monitor the progress of the goals and objectives of the SEATEC Case Study Model Development Project. Over fourteen (14) papers have been developed and presented or accepted for presentation at Professional Conferences.

BUSINESS AND INDUSTRY PARTNERING

The industry partners currently participating with the SEATEC project Include: Touchstone Industries, Purodenso, Hospitality House, Oak Ridge National Laboratories, Lockheed Martin, MCI Worldcom, and Time Warner Cable. These industry partners represent leaders in the communications field, automotive parts manufacturing, The Federal Department of Energy, and a non-profit agency. These agencies are given information concerning the SEATEC project and its goals and objectives through both team meetings and business meetings at the participating two-year community colleges. Through these meetings business and industry partners are advised that technicians trained through institutions utilizing curriculum with case studies incorporated into their curriculum will enter the workforce with traditional academic knowledge and real work force experience learned from utilizing industry-based case studies both inside and outside the classroom. The enticement for industry partners has been the possibility to hire graduates who had extensive troubleshooting practice, enhanced critical thinking skills, and the ability to work collaboratively with other team members. As an industry partner, they are able to help shape the education of graduates by providing site visits to their company, internships to faculty and students, information and graphics to be used in case studies about their companies, guests speakers for classes and conferences, feedback on case studies written by a college team, resources to be used in teaching case studies developed by SEATEC, and curriculum recommendations.

INTERNSHIP GUIDEBOOK

TEFATE industry internships provided faculty with the ability to re-enter the classroom with work-based experiences to use to motivate and energize their students. Establishing, implementing, and assessing faculty internships in the TEFATE project yielded many lessons. TEFATE faculty served in various internships at sites including Nortel, Oak Ridge National Laboratories, Smith and Nephew, Lockheed Martin and MCI and performed a variety of tasks for the host industries including training, establishing Intranets, installing cabling, conducting marketing studies, network administration, and designing networks. Through these internships, we were able to identify the challenges faced in conducting an internship program, as well as techniques that were successful in developing and managing internship activities.

The philosophy driving faculty internships, regardless of the type of business or activity, is based in the belief that the best curricula are developed in an environment where the faculty have

- participated directly in that business,
- utilized the business's cutting-edge technology, and
- applied this knowledge with the highest possible academic standards.

TEFATE's Guidebook for Developing Faculty Internships reflects the guidelines for conducting faculty internships in business and industry that emerged from the 24 internships that were carried out during the two-year TEFATE project. This document is currently available the SEATEC web site.

WEB SITE

Additional information about the South East Advanced Technological Education Consortium and its programs may be obtained directly from the SEATEC website: http://www.nsti.tec.tn.us/SEATEC <http://www.nsti.tec.tn.us/SEATEC>. Please visit this site and provide feedback to us through the supplied email capability.

EAST TENNESSEE STATE UNIVERSITY

Since 1992 East Tennessee State University (ETSU) has been striving to use the case method in teaching interdisciplinary graduate courses in engineering technology, health care management, and education. Many of the challenges cited in this pilot study were encountered, and some were overcome. One of the significant lessons learned in this process was that win-win partnerships were a substantial benefit in developing and teaching cases that captured the students' interest and imagination. The purpose of this section is to use this experience to suggest a conceptual framework for developing interdisciplinary cases. Hopefully, this will shed some light on a path that others may choose to follow.

Step 1

Develop a shared vision. It is essential that the strategic objectives of the University and Organization offering the case study setting be aligned to ensure that mutually beneficial outcomes result. When course objectives were consistent with organization's needs, and when the resulting case study provided a measurable benefit to the organization, a meaningful real world learning opportunity resulted. This outcome was true in manufacturing, service, health care and educational settings.

Step 2

Define a pilot project. A minimum risk trial period is suggested prior to launching into an extensive investment of time and energy. The organization's need must be real and timely. However, project accomplishment must be feasible within the time constraints of the professors' and students' workload. It is also important to ensure that the technical approach and the project's anticipated outcomes are consistent with the course objectives.

Step 3

Implement the pilot project and review lessons learned. A practical approach consists of picking a project with four or five students and two or three team members from the partner's organization. Ideally, these team members are enthusiastic and have the ability to gain support from the organization as required. An executive sponsor is essential to ensuring overall success. And the professor must plan to invest significant time to coach the students and help facilitate the problem solving process.

Step 4

Implement a full class project. Based upon the success of the pilot project and implementation of lessons learned, a full class project is possible with 15 students and a comparable number of associates from the partnering organization. Care must be taken to ensure that the professors and students have practical real world experience in the disciplines necessary to address and solve the organization's problem.

Step 5

Define company champions and sponsors. Sponsorship by senior executives and close coordination between these champions and the university professors is vital to overcoming the obstacles that always appear when projects are focused on current day to day issues. When champions provide the required support and tasks are well defined, the students have an outstanding learning experience and a good case is developed that can be used in future classes.

Step 6

Have students keep personal journals. When students work hand in hand with the organization, it is challenging for the professor to assess individual student performance. Having students keep and share personal journals with the professor was a vital step in maintaining a dialogue between the students and professor. Using the personal journal, the professor is able to take timely corrective action, help students discover the desired learning outcomes on different time scales, and have the students become individuals within the team framework without jeopardizing project success.

Step 7

Conduct regular review meetings. Regular review meetings promote a proactive approach to achieving project, student, and course objectives. Weekly reviews between students and professors are essential. Regular reviews between students, professor, and partner organization also contribute substantially to success. Full management reviews, are suggested on a monthly basis. These project reviews ensure that students realize the desired learning outcomes, and that the organization benefits from the outside perspective provided by the students and professor.

Step 8

Plan for integrated class lectures. Student "buy in" and enthusiasm are enhanced when class lectures and projects are integrated. Often the partnering organization is able to participate, and help deliver directly related material. Best results were realized when the professor became an active member of the problem solving team. Often the professor helped to coach students and the organization's team members during the problem solving efforts. This coaching and/or facilitating role may be new for many professors. However, it is often key to achieving commitment and full participation from the partnering organization.

Step 9

Achieve consensus on project findings. A consensus review of project findings is important. One approach that proved successful was to have the students make a formal presentation of their findings to the entire partnering organization's senior management team. After the presentation, a detailed final report was submitted with recommended action plans for implementing all recommendations. Feedback from senior management is helpful in ensuring case validity. It also serves to ensure that the organization will approve the case for future publication. This is and important consideration, especially for junior faculty who expect to use the case research to support future promotion and tenure considerations.

Step 10

Celebrate Success and Plan For Strengthening the Partnership in the future. Once the organization learns that substantial benefits result, they are more inclined to continue the relationship. This provides the opportunity for faculty members to develop future case studies. One key to success is to ensure that mutually beneficial outcomes are identified for each new case.

CONCLUDING DISCUSSION

Given the limitations in the survey, - (sample size, experiences or inexperience of participants, etc.) it is hard to conclude that there is no difference in case development and use outside business discipline. Our survey indicated that there was little or no difference among cases developed for the diverse disciplines.

The different types of cases mentioned seem to have a representation among the disciplines. Thus, if the convergence is towards decision focused cases, it will be possible to see reason for predominance of case development and application in business. Also this approach tends to define cases in terms of content and process and not necessarily its impact.

Case development and applications for purposes of developing critical thinking, analytical, integrative communication, etc. skills abound and is proven effective in the programs mentioned earlier in this paper. Additional testimonies appear in the expansion of tracks and sessions among case Research organizations such as The North American Case Research Association (NACRA), World Association for Case Method Research and Application (WACRA), Southeast Case Research Association (SECRA) and many others. These organizations have made efforts to attract non-business case authors and users by including - engineering, technology, education, MIS, economics, etc. tracks as against what was primarily strategic Management, Marketing, Organization Behavior, Human Resources, etc. tracks.

WACRA was one of the early movers in recognizing the potential impact of case method at all levels of learning as well as any discipline. It had always included programs to serve primary, secondary and university faculty, plus corporate government, and other organizational administrators. Recent support from funding agencies and corporations, as evidenced in the LITEE, SEATEC, IEM-IDEA, will go a long-way to enhance the development of cases as a teaching tool.

The trend is towards interdisciplinary education and once again evidence abound in the programs described above for collaboration and cooperation among diverse faculty.

Case method or discussion method of learning is critical to the development of work-ready graduates at all levels. Early preparation leads to effectiveness in critical thinking, leadership skills, team building and other necessary skills needed for holistic career development. The approach is challenging and time consuming, if done right. It challenges both the Instructor and the students but the outcome is definitely worth the effort.

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WOMEN IN INTERNATIONAL BUSINESS CASE STUDIES: AN UPDATE

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Abstract

This study updates a 1991 WACRA paper addressing the availability of female role models in international casebooks. The analysis found 15.2% of 750 international business case studies showing women in significant roles versus 2.3% of 388 cases reviewed before. Overall, the results generally suggest that case writers in current international text- and casebooks portray women in roles reflective of comparable managerial, functional, and professional roles in the corporate world. Case and book authors are encouraged to scrutinize the material they incorporate in revised and new cases and text- and casebooks to assure the presence of appropriate role models for women.

INTRODUCTION

As commercial activity becomes increasingly internationalized, there is a corresponding increase in the need for international managers [Ruhe & Allen, 1997]. While an increasing number of women express ambitions to work in international business [Adler & Izraeli, 1988], the number of Americans who see themselves as international executives is actually decreasing [Yates, 1994]. These contrary trends suggest that the percentage of women becoming international managers will increase, as predicted by Naisbitt and Aburdene [1990]. Accordingly, preparing women for assignments in international management has become an increasing concern for both companies with international operations and business educators.

Evidence that women are making progress in attaining international assignments comes from one study that found the percentage of women corporate expatriates increasing from 5% in 1992 to 12% in 1994, with the expectation that this percentage will rise to 20% by the new millennium [Ioannou, 1994]. This compares with other studies reporting women expatriate managers at 3% in 1984 [Adler, 1984], 5% in 1988 [Moran, Stahl & Boyer], 6% in 1994 [Adler], and 16% in 1995 [Stuck & Ruhe].

As to their success in overseas assignments, numerous studies indicate that women perform effectively as expatriates. This observation may be reached from at least three perspectives: demonstrated leadership [Adler, 1997], self-reporting [Adler, 1994; Jelinek & Adler, 1988], or corporate surveys [Adler, 1984, 1993; Moran, Stahl, & Boyer, 1988]. Indeed, Adler [1994] concludes that, on average, American women expatriate managers outperform their American male counterparts.

Expanding career opportunities for women as expatriates depends not only upon overseas assignments by companies but also upon the preparation offered by colleges and universities. Business schools in particular rely heavily upon case studies in their educational processes, especially in courses designed to educate students about international issues. Since women are slightly over 50% of U. S. undergraduate students, questions arise as to whether or not women are being adequately represented in business case studies that would be used in an internationally-oriented curriculum. What role models might they find in their curricula that may inspire them and/or be helpful in preparing them for international assignments? Does the depiction of women in international settings in business school case studies provide reasonable portrayals of their actual numbers and roles in the "real world?" Inadequate role models have been found to contribute to negative professional self-images [Juhazy,1989; Sanford & Donovan, 1984] and may conceivably even exacerbate declines in self-esteem found among college women as they progress through their education, as reported some two decades ago [Astin, 1977]. Earlier studies of sex role stereotypes of leaders indicated that men were seen as competent and managerial material while women were seen as having too little self-confidence, ambition, and task-orientation for leadership [Berry, 1998, Schein, et.al, 1996]. Because the primary culprit for these stereotypes is usually linked to socialization, it seems imperative that case writers and case users consider their role in contributing to sex role stereotypes.

To address these questions concerning the relative availability of appropriate female role models in international management training, Ruhe & Thompson [1991] performed a content analysis of 388 cases published in 19 international, college-level text- and casebooks. These results were initially presented by Ruhe at the Berlin WACRA conference in 1991. Fifteen of the 19 books had been published within the years 1988 to 1991. Their analysis found that only nine cases (2.3%) portrayed women in significant managerial and/or professional roles

In the present study, the same basic questions examined by Ruhe & Thompson [1991] are reexamined to assess any changes during the past ten year period in the portrayal of women in international business case studies of the kind commonly used for educating students in an internationally-oriented curricula.

METHOD

Essentially the same methodology used by Ruhe & Thompson [1991] was employed in the present analysis. Textbooks, focused on the international aspects of business education as well as incorporating cases as a significant part of their pedagogy, and casebooks per se, containing cases addressing international issues, were selected. The book selection process was restricted a priori to works (1) focused on international management or marketing or strategic management (the latter because, per accreditation guidelines of the American Assembly of Collegiate Schools of Business, all students interested in careers in international business would be required to take a capstone strategic management course), and (2) published subsequent to 1991, since this was the most recent publication date of the books used in the previous study. Books in such functional areas as accounting, finance, operations, and information technology were not incorporated because the cases contained therein tended to be less general and rather narrowly focused on technical or problem-specific issues.

Case selection within books was relatively straightforward. If the book itself focused specifically on the international aspects of business (i.e., international marketing, international management, international business, etc.), all cases contained therein were deemed "international." Similarly, if the authors indicated any case as "international" it was so deemed. Since strategic management text- and casebooks virtually always include at least some internationally-oriented cases, it was necessary to review all the cases included that were not so indicated. In all selection decisions, some degree of comprehensiveness in a case was sought. Exceedingly short cases having only a few paragraphs (often called "caselettes") were generally ignored because of their tendency to be entirely too narrowly focused.

The overall selection process may be said to have been randomized to some extent in that (1) the 35 book choices from 10 different publishers were guided by convenience and not some underlying bias, and (2) the case choices within the books were controlled by the text authors.

Since content analysis under these conditions is inherently subjective in its application, a woman needed to be portrayed in a significant role, relative to the intention of the case study, in order for the case to be included in the count. However, if a particular role would not generally be counted using the aforementioned guidelines but was consequential to the obvious intentions of the case study (e.g., a wife and husband struggling with family adjustment problems in a foreign culture), it would be included.

RESULTS

The book selection process yielded a total of 35 books (see EXHIBIT 1), nearly double the number used in the previous study. Of these, nine focus on international marketing; 11, strategic management; and, 15, international management. For the purposes of book category, international management includes the books designated as international business, international organizational behavior, and international human resource management; otherwise, the terms international management and international business are used interchangeably and all inclusively. As to their timeliness, nearly all (32) of the books were published within the last three years, with a majority (21) published within the past year and the greatest number (13) during the current year (1998). Among the ten publishers nine authors represented by Prentice-Hall together averaged 20.5% women representation, while nine authors from Irwin and Irwin/McGraw-Hill averaged only 13.4% women representation in international cases. In all, following the case selection process yielded 750 cases to be considered. Of these, one hundred fourteen cases (15.2%) reflect the presence of at least one woman in at least one significant role. Exhibit 1 shows in paranthesis the number of cases depicting women in significant roles and the number of international cases reviewed from each text. Women were depicted in significant roles in 10.6% of the international marketing cases (i.e., in 23 cases out of 218); 12.3%, of the international management cases (45 out of 367), and, 27.9%, of the strategic management internationally-oriented cases (46 out of 165).

One-half (106) of the roles reflected positions at executive levels of organizations (Board of Directors, Executive, and Junior Executive levels). Indeed, the largest single category of roles in evidence was that of senior executive (27.4%), reflecting positions such as CEO, Chairperson, President, COO, Executive Vice President, and Senior Vice President. In addition, 9.9% of the roles were that of founder or co-founder of an organization. Middle management and supervisory positions were evident in 15.6% of the roles.

The roles were further classified as to functional area, with a total of the 212 indicating an identifiable function. The 68 roles were distributed among functions as follows: Engineering, 2.9%; Finance, 17.7%; Marketing 20.6%; and Operations, 41.2%.

DISCUSSION AND CONCLUSIONS

In comparing the present study's results for the proportion of international business case studies having women in significant roles (15.2%) with that of the earlier study (2.3%), the salient observation is the statistically significant increase ($\underline{z} = 6.64$, two-tailed; $\underline{p} < .001$). The Ruhe & Thompson [1991] study, in concluding that their analysis showed women rarely portrayed as international managers, they remarked that the reasons for this result were open to question, that is, whether the result was due to a lack of updated cases, limited availability of women expatriates, misperceptions of women's roles in multinational corporations, or, possibly, an entrenched bias against women managers. Further, they opined that since much case writing depends upon what is conveniently available to the case writer (predominately males), a bias could easily develop.

Women have clearly made substantial progress in achieving desirable positions of power and influence since most of the case studies used in the earlier study were prepared some ten years ago [Adler, 1997], irrespective of such considerations as the "glass ceiling" and the fact that only 2.4% of the chairpersons and CEOs of Fortune 500 firms are women [Wellington, 1996]. No doubt these gains have influenced business case writing in a number of ways: (1) There literally are more women in responsible positions in organizations that are subjects of case writing; (2) There are now more women in academe who are writing cases and publishing text- and casebooks; and, (3) Male case writers and text- and casebook authors, particularly younger ones, are perhaps more sensitive today to the need to explicitly portray women in legitimate managerial and professional roles than they were ten years ago.

If anything, the number of cases found showing women in significant roles in both the present and earlier analyses is smaller than is actually true due to a number of factors that serve to deflate any quantity found. Salient among these are the variations in writing styles among case writers. Many cases incorporate few, or no, people, as a matter of style, or the case situation presented does not lend itself to the inclusion of people. Sometimes people's comments are integral to case analysis, but only titles or positions identify the person (e.g., A manager commented .....; or, The Director of Human Resources said .....). Obviously, when this style is used, some of the individuals portrayed could be women. Organization charts are frequently depicted showing one or two initials with the last name plus the position title, thus, the gender of a given person is indeterminate. Some cases depict actual current or historical events where women simply are not a part of the situation presented, or where women may actually have had a significant role which simply was not mentioned; case writing styles of these kinds and the selection thereof do not necessarily indicate a bias against women, but they may reflect untoward insensitivity. Lastly, some international cases are oriented to countries and/or events where the local culture restricts or prevents women from attaining significant organizational or professional roles.

In addition to the known factors discussed above, women's relative scarcity in leading major corporations, which are the source of a great many case studies, does not mean that they are absent as leaders of international companies [Adler, 1997]. As was true for some 10% of the roles identified in this study, many women have founded or co-founded their own businesses. Also, many have assumed the leadership of privately held family businesses, which are infrequently used as case studies because of the dearth of publicly available information on such companies. According to the Small Business Administration, women currently own one-third of all American businesses and employ more people than the entire Fortune 500 list of America's largest companies combined [Aburdene & Nasbitt, 1992].

The data from this study suggest that case writers writing international cases used in marketing and management, but especially those used in marketing, seem to present women in substantially fewer cases, relatively speaking, than their counterparts in strategic management. Women need to be depicted more often in significant roles at middle management and supervisory organizational levels, judging by the results of this study. Further, consideration could be given to modifying case writing styles to explicitly include means for identifying gender in both case narratives and graphical case materials (i.e., figures, exhibits, charts, tables, etc.). Some case authors may even feel that they are actually being fairer to women by not including mention of gender when presenting a case situation, when in fact they may be doing the opposite by unwittingly missing opportunities to provide meaningful role models.

Case and book authors are encouraged to scrutinize the material they incorporate in revised and new cases and text- and casebooks, as well as the styles in which the cases are presented, in an effort to assure the presence of appropriate role models for women and compensate for any latent bias. If women students interested in international business opportunities are to see themselves as potential international managers and professionals, they need relevant role models in case portrayals as part of a comprehensive international business education.

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CHAPTER SEVEN

BUILDING BRIDGES FOR THE FUTURE: AN INNOVATIVE PARTNERSHIP MODEL

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Abstract

Global health is important to the U.S. in a global health village. Central and Eastern European countries have initiated health care sector reforms given macroeconomic pressures. Health sector transformation efforts are complex and difficult requiring a management infrastructure to initiate and sustain restructuring efforts under democratization and privatization initiatives. Global intersectorial action through transnational cooperation and partnerships is appropriate to address random, discontinuous changes requiring nonlinear thinking. The BRIDGE partnership model, funded by a grant from AIHA//USAID, emphasized entrepreneurship and sustainability of efforts through the exchange of information and ideas between universities, faculties, community networks and health care professionals between the U.S. and Slovak Republic.[1, 2]

INTRODUCTION

It is in the direct interests of the United States to build partnerships for health and to exert greater leadership in transnational health problems. Global health transcends national boundaries and has become a more pronounced issue in the globalization of the world economy. As U.S. business leaders are responding to rapid globalization, professionals and educators in the health sciences can provide creative and entrepreneurial leadership in the areas of research and development, surveillance, education and training, global partnerships, coordination and leadership [Institute of Medicine, 1997]. A significant reorientation and restructuring of health services and systems is needed in Central and Eastern Europe (CEE) to address economic pressures, social-political disequilibrium, and primary health care needs of people. Planning or strategy development is one of several processes needed to navigate and manage change [Rice, 1994]. New strategies, paradigms and models must simultaneously address health management education as well as broad-based institutional restructuring to achieve a market - oriented health care sectorial transformation [Cleland, 1994]. Global health advocacy is in the U.S. best interest in a global health village.

EUROPEAN HEALTH CARE REFORM

On January 1, 1993, the Slovak Republic became an independent state when Czechoslovakia was divided into the Czech and Slovak Republics. Democratization and a free market economy were emphasized resulting in immediate opportunities for change in the health care sector. However, with a severely depressed economy, the sustainability of health system changes was a major problem [West, Krcmery, Rusnakova, Murgas, 1998]. European countries have focused on cost control measures to respond to economic pressures which has created social – political concerns regarding access, quality and health status. The reform debate on health policy coupled with incremental changes has precipitated social tension and disequilibrium in organizational structures [Saltman, Figueras, 1997].

Transformation efforts of the health care sector in the Slovak Republic employed strategies of privatization, liberalization, decentralization, marketization and transnationalization; the success of which has little empirical evidence concerning the effectiveness of these approaches to reform policy and respond to macroeconomics pressures. Given the chaotic nature of economic reform and democratization processes, new approaches/models are needed to address discontinuous changes requiring nonlinear interventions. Global intersectorial action through transnational cooperation and partnerships requires collaborative strategies to address inequities between and within CEE countries [World Health Organization, 1998].

Movement from a state of socialism to a free market economy requires the preparation of health care managers who will be able to provide leadership on complex issues, respond to change and develop new organizational structures, services and systems of health care [West, Krcmery, Rusnakova, Murgas, 1998]. Change creates discontinuities and disequilibrium conditions requiring global teamwork and collaborative interorganizational relationships [Inkpen, 1998].

HISTORICAL BACKGROUND

Health care transformation efforts in CEE require effective and systematic management. The development of health care management infrastructure needs to be addressed at several levels: university prepared managers, education for established managers, and a systematic continuing education process to maintain current skills and knowledge. Establishing a new system of health care management capable of responding to current changes and future initiatives (demands) in the CEE region is a challenging task [Aaronson, West, Heshmat, Ramirez, 1998]. Aaronson and West [1997] in the introduction to a special issue of the Journal of Health Administration Education state:

> "In any paradigm shift, academia has the opportunity to contribute to the development and understanding of the new paradigm. At the core of the philosophical shift from state socialism to free market economies is the central role of management in the capitalist enterprise. Academic institutions that are preparing the next generation of leadership for health care enterprises can have a profound effect on the ability of management to achieve the skill and confidence levels necessary to become change agents."

In 1995 the American International Health Alliance (AIHA) and the United States Agency for International Development (USAID) announced an initiative to establish Health Management Education Partnerships in Central and Eastern Europe (CEE). In response to this request the University of Scranton developed a BRIDGE Model (Building Relationships in Developing and Growing Economies). This highly innovative and unique partnership model was initiated between the University of Scranton and three partners in the Slovak Republic; namely, the University of Matej Bel (Banska, Bystrica), Trnava University (Trnava) and the Health Management School (Bratislava). A Memorandum of Understanding (MOU) was executed on February 9, 1996. A subagreement was developed and executed on April 25, 1996 and a detailed workplan was officially adopted and executed on April 30, 1996. The overall goal of the Scranton – Slovakia Health Management Education Partnership (HMEP) was to develop, improve and sustain a health management education capacity in the Slovak Republic. This model required a high level of collaboration in the area of needs assessment, on going communication to introduce changes in health management education, curriculum design and faculty development within the existing university and continuing education community (See Table 1).

THE BRIDGE MODEL

The BRIDGE partnership model developed a network complex composed of several universities, community health care providers, professional organizations and logistical support (Figure 1). The University of Scranton (UOS), graduate MHA program, served as the coordinating partner in the strategic alliance. The University of Matej Bel (UMB) through the Faculty of Economics provided education for the development of health care managers through a business faculty and curriculum. Trnava University (TU) through the School of Public Health and Nursing, focused on educational development and curriculum expansion for public health nurses and physicians. The Health Management School (HMS) developed post-graduate educational training experiences for the ongoing training of existing professionals and practitioners in the health management field in the Slovak Republic.

The BRIDGE Model utilized 14 healthcare providers in 14 Northeastern Pennsylvania Counties representing the full spectrum and continuum of health care services and systems. Involvement of community organizations and professional associations supported the establishment of interpartnership activities allowing for the acquisition of applied experience and additional knowledge with emerging health care systems through study tours. Logistical support for the model was forthcoming from AIHA/USAID and a working relationship was established with the Association of University Programs in Health Administration (AUPHA) and the American College of Healthcare Executives (ACHE). Through a collaborative strategic alliance, the BRIDGE partnership model encouraged the exchange of knowledge and ideas in the area of health management education. The partnership model stressed a strong interaction and exchange of activities among academic faculties, students and health care professionals. A fundamental premise behind the model asserts that thoughtful and productive education enables the cultivation and implementation of ideas that have sustaining properties within the health care sector.

WORKPLAN INITIATIVES

When responding to economic - social - political pressures, new cognitive maps in the health care industry are needed to create new knowledge, frameworks and paradigms for collaborative learning and the development of core competencies and skills in the health care sector. The BRIDGE Model is an international strategic alliance designed to facilitate collaborative and non-linear open learning. Utilization of global teams, cultural alignment and organizational linkages provides and facilitates collaborative interorganizational relationships. The development of a strategic workplan required trust, mutual respect and creating an atmosphere that enabled active, open exchanges of information and ideas. Communication, mutual respect and cooperation were essential during the initial five months of the project in order for the principle partners involved in the partnership to collectively design a workplan that was realistic, measurable and sustainable. Strategic objectives were designed to achieve the ultimate goal of designing a program focused on health care delivery system development. Curriculum design, faculty development, program organization and exposure and access to a wide range of community health care delivery system components was essential. The action plan required implementation, monitoring and evaluation after completing specific learning activities.

The HMEP required health care partners, universities, providers, faculties, organizations and associations to develop a strong global team approach. The project was a 3-4 year project with significant in-kind resources, extensive travel, provision of human resources to support initiatives, mentorships, preceptorships, study tours, conferences, workshops and symposiums, access to data and technology to support colleague consultation, collaborative research and evaluation. The workplan objectives included:

A. Establishing a Health Management Institute at Trnava University;
B. Developing and publishing an international journal "The Journal of Health Management and Public Health";
C. Implementing an Annual International Health Care Conference at different locations over three years;
D. Providing health management education at the University of Matej Bel, Trnava University and Health Management School as part of the curriculum;
E. Faculty development;

F. Professional development;
G. Curriculum development and modification;
H. Management certification, credentialing and accreditation;
I. Utilizing Sister Cities International;
J. Student exchanges and initiatives;
K. Faculty exchanges and initiatives;
L. Developing a Center for Health Policy and Strategy at UMB;
M. Developing a Center for Health Care Training in Consulting Skills at the HMS;
N. Developing a Nursing Resource Center at TU;
O. Utilizing Televideo conferencing;
P. Instituting academic appointments for faculty in different countries;
Q. Developing a Center for Rehabilitation Education at TU; and
R. Pursuing Research and Scholarship opportunities.

ASSESSMENT AND OUTCOMES

The workplan developed by the partnership entailed the development of specific activities to achieve stated objectives. Administrative compliance with the subgrant agreement necessitated specific assessment, monitoring and evaluation activities. Periodic quantitative assessments were conducted by each of the partners in the development and implementation of the workplan objectives. Peer review activities were conducted by a peer review team composed of representatives from other CEE countries and AUPHA. Financial and programmatic reports were submitted monthly to AIHA in addition to highly documented trip reports detailing specific objectives to be achieved during faculty-student-professional exchanges between countries.

SUMMARY OF ACCOMPLISHMENTS

As stated previously, the workplan developed initiatives which had identifiable objectives and activities and measureable outcomes. Table 1 identifies outcomes for 21 initiatives that were undertaken in the HMEP – BRIDGE strategic cooperative alliance. A qualitative evaluation of the HMEP has been reported in the literature [Rusnakova, West, Hlavacka, Krcmery, Murgas, 1998]. Extensive time was devoted to understanding accreditation processes used for educational assessmen in the Slovak Republic. The comparative accreditation analysis offers future directions for accreditation processes in the Slovak Republic as a result of the HMEP partnership [Murgas, West, Rusnakova, Krcmery, Aaronson, 1998]. The summary of accomplishments reflects the significant progress on implementing the Scranton – Slovakia partnership objectives in establishment of a Health Management Institute, establishing the Journal of Health Management and Public Health (publishing 10 issues), conducting 3 International Health Care Conferences, Conducting 3 Clinical Research Conferences, instituting new curriculum at TU and UMB, establishing professional organizations in Slovakia, effectuating 5 affiliated faculty appointments, conducting 75 faculty – student exchanges, maintaining international AUPHA membership, creating the Center for Health Policy and Strategy at UMB, creating the Center for Rehabilitation Medicine at TU, implementing a Nursing Resource Center at TU, utilizing televideo conferencing, providing training conferences for 150 senior and middle managers, and publishing a health care management text in the Slovak Republic. Table 2 reflects the Scranton – Slovakia partnership accomplishments on objectives established in 1996.

UNANTICIPATED OUTCOMES

Strategic collaborative alliances, if properly structured and implemented, result in ideas and efforts that surpass initial programmatic objectives and have sustainable properties. A few of the unanticipated outcomes include development of a Sister Cities International Project, presentation of an honorary degree, faculty inducted into an International Honor Society of Nursing, preliminary efforts towards the establishment of a rehabilitation foundation, extensive publications in refereed american journals, a high level of student involvement and initiation of community projects, international presentations made by the partners in other countries, and the level of substantial in-kind human service contributions made by community partners to the model.

CRITICAL VARIABLES

Partnerships involve people working with people in a collaborative, synergistic effort. Developing mutual respect and trust takes time but can be accomplished when working on specific objectives. Strategic planning necessitates on going communication among all partners to maintain a high level of coordination. Projects identified require replicability in addition to sustainability. In order for initiatives to be sustainable, there is also a requirement that activities be appropriately assessed, developed and monitored through all phases. The journal publishes original work in health care management and provides a form for health care professionals to exchange ideas, strategies and methods to facilitate changes and improvements in the delivery of health services, health policy and the health status of populations. International conferences are held as a way of sharing health management knowledge, information, ideas, resources, and scientific research. Workshop, symposia and seminars provide the venue for educators and students to develop professional papers and present ideas in an open forum for the mutual exchange of information and ideas. Faculty appointments and the establishment of professional organizations provide a professional identity for health care executives, faculty and leaders. Each of the respective partners in the BRIDGE Model, through their educational institutions, enabled faculty appointments to be made for key stakeholders.

SUSTAINABLE ELEMENTS

The BRIDGE Model had a goal of establishing joint activities in the field of education, research, scholarship, and consulting within the framework of the project. New experiences with multilateral collaboration enrich future relationships and implement small projects that impact on global issues in health care. Incremental change processes are attractive at a national level and provide a bases for future collaboration. Those projects implemented that have high sustaining properties and will continue to exist after the partnership is terminated include: Health Management Institute, Nursing Resources Center, Center for Health Policy and Strategies, Center for Health Consultancies, Center for Rehabilitation Education, Sister Cities between Scranton and Trnava, Faculty Appointments, Journal of Health Management and Public Health, International Conferences, curriculum modification, faculty and professional development, research and scholarship, and certification and accreditation.

CONCLUSION

The outcomes of the BRIDGE Partnership Model clearly demonstrate that collaborative, strategic alliances allow for a process of harmonization and the enrichment of future relationships necessary for a global economy. Global team work, cultural understanding and trust provide critical variables allowing for the sustainment of existing projects and the development of future initiatives. The HMEP partners are convinced that experiences from implementation of the BRIDGE Model have a potential to influence the values of individuals, organizations and community groups in the Slovak Republic and other CEE countries. The BRIDGE Model utilizes several innovative educational initiatives, approaches and strategies requiring dedicated professionals who are willing to openly and willingly share information and ideas.

FIGURE 1
THE BRIDGE PARTNERSHIP ORGANIZATIONAL STRUCTURE

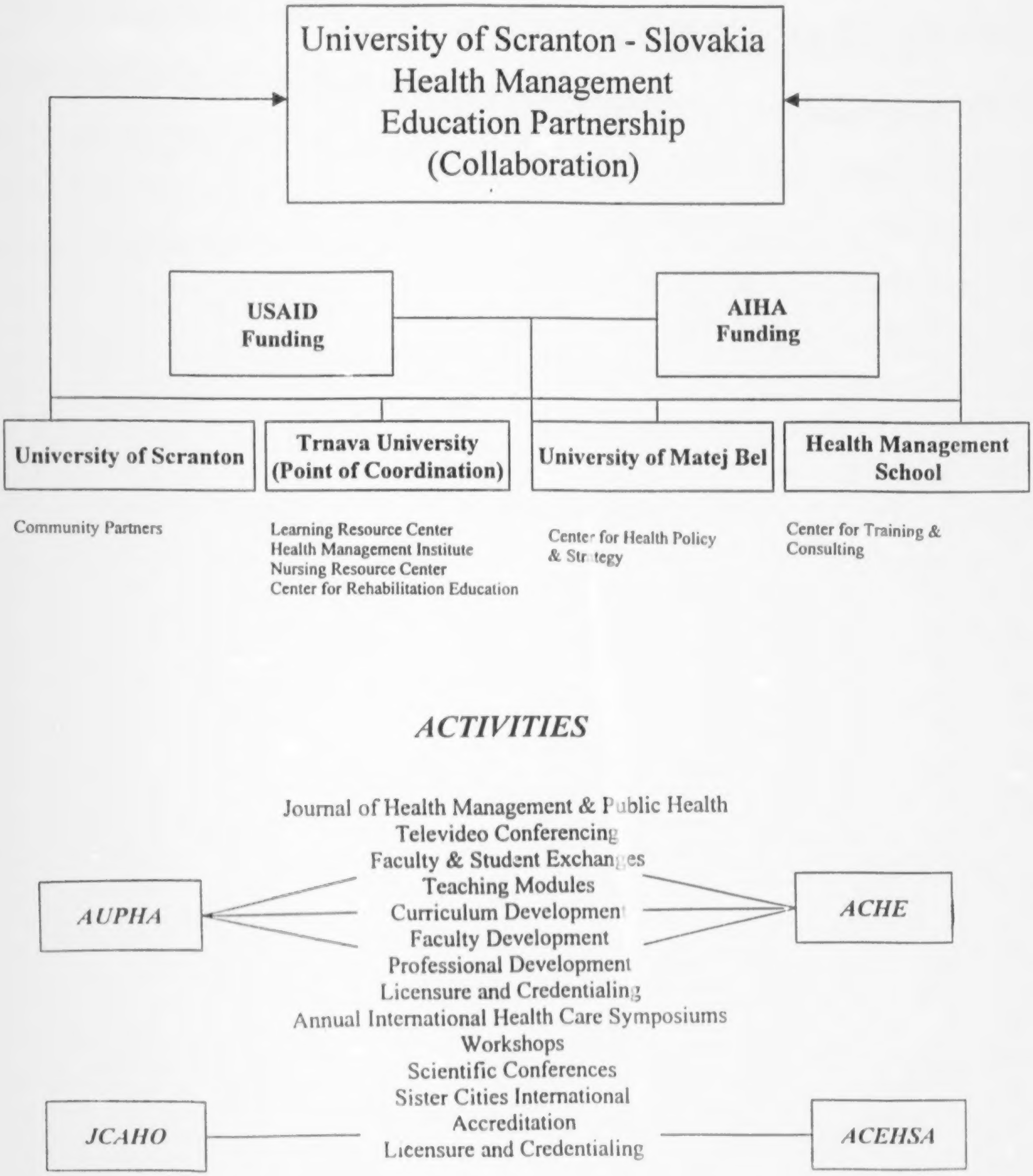
University of Scranton - Slovakia Health Management Education Partnership (Collaboration)
USAID Funding
AIHA Funding
University of Scranton
Trnava University (Point of Coordination)
University of Matej Bel
Health Management School
Community Partners
Learning Resource Center
Health Management Institute
Nursing Resource Center
Center for Rehabilitation Education
Center for Health Policy & Strategy
Center for Training & Consulting
ACTIVITIES
Journal of Health Management & Public Health
Televideo Conferencing
Faculty & Student Exchanges
Teaching Modules
Curriculum Development
Faculty Development
Professional Development
Licensure and Credentialing
Annual International Health Care Symposiums
Workshops
Scientific Conferences
Sister Cities International
Accreditation
Licensure and Credentialing
AUPHA
ACHE
JCAHO
ACEHSA

TABLE 1
HISTORICAL OVERVIEW OF UNIVERSITY OF SCRANTON-SLOVAKIA HEALTH MANAGEMENT EDUCATION PARTNERSHIP

June 1, 1995	AIHA/USAID Announcement to establish new HME partnership in CEE, University of Scranton proposal submitted to AIHA
December 14-20, 1995	Site visits and interviews conducted with Trnava University, University of Matej Bel, and Health Management School. Memorandum of Understanding discussed and draft document prepared
February 9, 1996	Memorandum of Understanding executed with official ceremonies at the Devin Hotel in Bratislava, Slovakia
April 25, 1996	AIHA Partnership Program Subgrant Agreement [modification] executed
April 30, 1996	HME Partnership Workplan officially adopted and executed
May 1, 1996	HME Workplan implementation initiated by UofS-Slovakian partners
June, 1996	Journal of Health Management and Public Health (JHMPH) created
October 8, 1996	Health Management Institute dedicated at TU First International Symposium on Health Care Management conducted
October 9, 1996 published	Volume 1, Number 1 of Journal of Health Management and Public Health
November 19, 1996	Project Assessment and Status Report prepared and submitted to AIHA
December 5, 1996	Project Assessment and Status Report prepared and submitted for use by USAID evaluation team
December 5-6, 1996	Workplan amendments adopted by HME partners and incorporated into partnership activities for 1997 and 1998
January 16, 1997	Student exchange program initiated and workplan amendment accepted. Faculty exchange program initiated
January 29, 1997	Learning Resource Center Project Agreements Executed with TU and HMS and project implemented
February 21, 1997	Approval of workplan amendments by AIHA
March 11, 1997	AIHA funding continuation notification received
March 25, 1997	Project Assessment and Status Report completed and adopted by HME partners
March 31, 1997	Annual Report submitted to AIHA along with preliminary workplan covering the period May 1, 1997 to September 30, 1998
May 7-9, 1997	ACEHSA site visit observation by HMEP

June 13-15, 1997	HME partnership developed workplan amendments, modifications and activities for June 15, 1997 to September 30, 1998
September 1997	ACHE Student Chapters established at TU and UMB
September 14-21, 1997	HME partnership planning and strategy session for 1998 conducted; new workplan initiatives, amendments, adopted for 1998; preparation made for AUPHA peer review in January, 1998
October 1997	Center for Training and Consultancy implemented at HMS
October 13-17, 1997	Project Assessment and Status Report adopted as Annual Report for AUPHA peer review, and as official workplan for November 1, 1997 to September 30, 1998
October 16-17, 1997	Second Annual International Health Care Symposium conducted
November 12, 1997	AIHA Partnership Program Subagreement Award for May 1, 1997 to September 30, 1998
November 13, 1997	Center for Health Policy and Strategy at UMB announced
December 31, 1997	Project Assessment and Status Report of Health Management Education Partnership submitted to AIHA and AUPHA
January 26-28, 1998	Peer Review conducted by AUPHA at TU, UMB and HMS by international site visit team
February 11, 1998	Sister Cities International Program executed between Trnava, Slovak Republic and Scranton, Pennsylvania
February 1998	Nursing Resource Center at TU implemented Center for Rehabilitation Medicine at TU announced

TABLE 2
SUMMARY OF ACCOMPLISHMENTS

WORKPLAN OBJECTIVE	OUTCOMES
1. Health Management Institute at TU	Established and Operational
2. Journals:	
Journal of Health Management and Public Health	10 Issues 83 Manuscripts Published International Review Board Established
Journal of Health Administration Education	2 Special Issues published
3. International Health Care Conferences	3 Conducted
4. Clinical Research Conferences	3 Conducted

5. Curriculum Development & New Courses	Implemented at TU and UMB
6. Professional Organizations:	
ACHE Student Chapters	2 Established at TU and UMB
MGMA Affiliation	1 at TU
AAMA Affiliation	1 at HMS
7. Specialized Workshops	250 Participants
8. Affiliated Faculty Appointments	5 Appointments
9. Faculty – Student Exchanges	75 Participants
10. International AUPHA Membership	3 – TU, UMB HMS
11. Center for Health Policy & Strategies at UMB	Established and Operational
12. Center for Rehabilitation Medicine at TU	Established and Operational
13. Nursing Resources Center at TU	Established and Operational
14. Training for Senior & Middle Managers	150 Trainees
15. Training Projects Implemented	45 Projects
16. Televideo Conferencing	8 Events
17. Nursing Management Workshops	25 Participants
18. Community Partnerships	14 Providers
19. Center for Consultancy Skill Development at HMS	Established
20. Health Care Text	1 Book Published
21. Accreditation Efforts	Standards Developed 2 Site Visits

ENDNOTES

1. This project received funding through the American International Health Alliance (AIHA) and the United States Agency for International Development (USAID) with the University of Scranton for implementation of a Health Management Education Partnership in the Slovak Republic as part of a Central and Eastern European (CEE) initiative.

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CONDUCTING A CASE-BASED INTER-UNIVERSITY FACULTY EXCHANGE

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Abstract

A series of case-based learning and teaching initiatives were used to "cross-pollinate" business principles from market-oriented Hong Kong to socialism-based Sezhuan Province in China. A faculty exchange program between Chongqing University China and the Chinese University of Hong Kong business school employed three variations of creative interactive teaching. Both the processes and outcomes involved enhanced personal and group awareness and fostered mastery of key business concepts and skills. We provide sufficient description for others to replicate the initiative. An invitation to others facing similar educational and development tasks is extended.

INTRODUCTION

Trans-national faculty exchange is a common approach to institutional enhancement [Cima and Daley, 1988; Watkins, 1986]. Programs between American and Chinese university are representative of such initiatives in that they are generally programmatic, i.e., curricular rather than theoretically focused [Mockler, Chao and Dologite, 1996], and multidisciplinary, i.e., including liberal arts, the sciences and business colleges [Ray, 199l; *Jet,* 1994; Rubin, 1995].

A smaller but growing number of authors address non-exchange but related issues such as business education reforms in formerly communist-based economies such as China, the Czech Republic and Bosnia--Herzegoviana [Nowak and Dew, 1996, Helms, 1996; and Benedek, 1997 respectively]. Still others discuss aspects of cross-cultural education and experiential learning in trans-national contexts [Allen and Young, 1997; Nicholson and Lust, 1993; Walck, 1992 and Whitely, 1992 are representative].

Whiteley [1996] offers the most clear insights for persons attempting management education in cross-cultural settings. Her recommendations are to 1) take great care in assessing communication gaps; 2) customize learning initiatives; and, 3) adapt local conventions (e.g., use of Chinese proverbs, games, vocabulary). These directives suggest the appropriateness of using a tailored, case-based, approach to enhance student and faculty development.

TRANSITIONING TO CASE-BASED LEARNING

At business schools in China, students learn primarily through lecture-based education. Such an approach is in keeping with traditional, oral-oriented pedagogy. It fits the supply constraints often present for print, electronic and visual media.

For the privilege of advanced education, university students know they will be expected to contribute strongly to the economic activities of the work unit to which they are assigned. An educational approach that helps students move from hearing in the classroom to seeing in the business environment would be valued.

Faculty members from Chongqing University China (CU) and the Chinese University of Hong Kong (CUHK) participated in a range of "on-site" activities on each other's campus. (The experiences of CUHK faculty are presented here as they better illustrate case-based educational initiatives; CU faculty visiting CUHK were active in learning, rather than demonstrating case-method teaching.) Building on the experiences and successes of executive development in the Commonwealth of Independent States (CIS), a three-step, interactive, educational experience was developed.

PHASE ONE: CASE-BASED RESEARCH

By its very nature, research if founded on examination of "instances". When multiple instances are studied, generalizations may be made. These premises led to the initial delivery of a series of short lectures for undergraduate students, with translation supplied by staff of CU. The basic tenants of customer need fulfillment, inventory control, and retail display were discussed. Students were then given a quasi-case assignment: in working in teams of two persons, students were to record and catalog the contents of a small retail shop.

Student teams (n=11) left the university grounds to visit stores in the neighborhoods and communities adjoining the institution. Each team visited a different shop and prepared a comprehensive list of items available for sale. The condition, quantity, and display environment of each unit was recorded. The task took several hours to complete.

Upon returning, students gave thoughtful consideration to the merchandise mix, selling environment, and inventory conditions they had observed. Next, they shared their descriptions, questions, and insights with members of other teams who had visited other stores. The groups then amalgamated multiple observations to form case-based generalizations.

The result was a significant deepening of their understanding of the basics of the case method. Observation, critical thinking and analysis, problem identification, and recommendation development was fostered. For example, many observations were made about the low level of inventory turnover, selling conditions that did not stimulate extended shopping behavior, and customer service practices that did little to foster merchant preference among consumers.

Students offered frequent and specific suggestion made as what "they would do" if they were in charge. Numerous mentions were made of how their understanding of the familiar (i.e., the concrete experience of shopping) would never be the same having now accomplished active, reflective observation.

PHASE TWO: CASE-BASED TEACHING

A second faculty exchange was conducted to meet two objectives: to provide more training for members of the business faculty at CU; and, to sharpen the analytical and decision making skills of graduate and undergraduate students. The primary mechanism selected to accomplish these objectives was modeling business case teaching in the business classroom.

The Chinese related very well to the historic roots of "case-" or "instance-based" learning. The idea of instructing military trainees about historic successes and failures in various battles and campaigns was immediately appreciated by the participants. Also appreciated was the importance of distinguishing symptoms from root problems and the consideration and administration of alternative "treatments" in the context of Chinese healing arts. From these historic and cultural bases, it was only a modest step to see the merit of teaching of business concepts and practicing business skills in a "case" context.

Using materials developed and translated prior to the visit, a short business case was given to a faculty and graduate student group (n=15) and to a class of undergraduate students (n=20). Table 1 shows the item used. This short, practice-length case can easily be adapted for use in a variety of cities and countries by changing the names of employees, countries, and industries. (Further insights on how to use and debrief the case are available from the first author.)

TABLE 1 - SUPREME BICYCLE MINI-CASE

Situation:

The Director of Marketing at Supreme Bicycle Corporation has a problem. Ms. Tang has received work that a competitor will be introducing a new model of three-wheeled bicycle into the American market. Sales to the United States make up 30% of Supreme's total sales. Three-wheeled bicycles are popular with a portion of older citizens, especially those living in Florida and Arizona. They are also used for moving supplies and products in other countries.

Ms. Tang had recently requested a series of focus group interviews be conducted with residents of retirement communities in Miami, Florida, USA. Extended to a national level, the results showed:

1. Retired persons perceive little difference in the quality of the current models of three-wheeled bicycles.
2. Persons aged sixty years and older want to buy their cycle already assembled.
3. Many older men and women would consider buying a "service and repair contract" for their three-wheeler.
4. The likelihood of purchase is somewhat related to the retail price, as shown below.

Price (US$)	171	180	195	210	225	234	240
Quantity Demanded	10,500	10,000	9,300	8,600	8,000	7,750	7,300

Instructions to Students:

Apply the "Five Step Case Method" (situation analysis, problem statement, alternative identification, evaluation of alternatives, recommendation and implementation).

Include calculation of total retail revenue, with graphic display of the data with "price" on the horizontal axis.

Be sure to make a specific recommendation and identify what factors were most important in your decision.

This "case-let" is designed to help students develop basic case-assessment skills. The context is low-risk, the product familiar, and the face validity of the case is high i.e., students relate the individual, grasp the importance of the decision, and appreciate the limits of information and the hidden implications of culture and economic prosperity.

The CUHK faculty member visiting Chongqing modeled how a "business case" discussion is conducted. Participants were given practice in: crafting of an accurate statement of the central issue; recognition of relevant data and constraints; development of creative, realistic alternative actions; thorough and quantitative assessment of the alternatives; and, formulating concrete, sequential implementation and evaluation of their recommendations.

Participants explained to their colleagues why "their" business case analyses and solution was superior. Questions and concerns were raised. Disagreements on calculations, logic, and assumptions were explored. At one point, when the dialogue seems to become quite "heated", the translator assured the non-Mandarin speaking instructor that there was a great deal of learning going on and that no one in the room was in any danger!

PHASE THREE: CASE-BASED APPLICATIONS

The objective of the third visit was to motivate students and faculty at CU to understand their own personal and group proclivities when using case-based and experiential learning. The CU undergraduate students and faculty members completed and scored the Kolb Learning Style Inventory (LSI) [Kolb, 1984]. This instrument has been used for more than a decade to help teachers and learners understand how they can communicate and learn more effectively. (It can be understood and employed with a modest amount of instructor preparation.)

Once participants knew their LSI scores and profile (accommodator, diverger, converger, assimilator), a short lecture on the implications LSI was delivered. Time was provided for the participants to share their scores and for reflective observations and commentary.

The next day, students divided into LSI profile groups and were given the task of designing a learning program for the LSI group "opposite" to their own style. (Faculty members participated as silent observers.) The student learning programs were orally presented and other groups responded with reactions. A great many ideas on how to "teach" so that students might best "learn" were shared. A number of the insights, requests, and reactions "forced" faculty and students to reevaluate how they "delivered" and "received" management concepts.

A total class discussion was held on the nature of each learning program and the behavior of the groups involved. There was considerable new "appreciation" for the thought processes, preferences, and distinctives of members of the academic community who were of a different LSI profile. Both students and faculty were assigned the writing of a short paper on the session.

This same process was followed in the next meeting that employed a hypothetical "crisis management" case. Students faced the "NASA Moon Landing" scenario [Ritchie and Thompson, 1984]. While traditionally used as a "team building" event, this "simulation" requires business case analysis skills such as problem identification, alternative generation and evaluation, decision making, implementation and control, contingency planning, and negotiation.

A final session was held with faculty members only. It had two parts. In the first portion, the "Myers-Briggs Type Indicator" (MBTI) personality and learning style assessment instrument [Myers and Briggs, 1993] was administered and scored. (This model of psychological preferences and characteristics has been widely employed in studies of managers, including cross-cultural settings. See Gardner and Martinko [1996] for discussion of reliability and validity.) A short lecture of the MBIT was delivered and time provided for the participants to share their scores and reflective observations.

The faculty members were next confronted with a hypothetical case: to describe their ideal university. They were divided groups based on MBIT type and given the task of designing their "Ideal University". Each MBTI group then orally presented their design. The final segment involved discussion of how the nature of the groups impacted the design process of an "ideal university". Faculty were encouraged to write a response to this session and to the exchange program.

IMPLICATIONS AND DIRECTIONS

Three major initiatives were developed to require students and faculty to employ the full range of case-analytic skills modeled by three University of Hong Kong faculty in an exchange program with Chongqing University in the P.R.C. The result was both educational and gratifying as students and instructors realized how far participants had come in their situation assessment, problem solving, listening, communication, and consensus-building, skills.

DISCUSSION

The initial exchange activities generated a number of outcomes. At an operational level, three conclusions seemed warranted. First, faculty at CU were better able to understand the context in which CUHK faculty and students operate. This helped them during their visits to Hong Kong. Second, there was a need for follow-up visits by faculty who could model other teaching--learning styles.

Arrangements were made to send an instructor who could model an alternate Asian educational perspective (in this instance, Japanese management skills).

Participants also shared and reached consensus on a number of philosophic issues to guide further exchange program development efforts. Specifically, the cycle of events in a case-based approach differs from the lecture method by actively engaging the student in the learning process. Exercises and questionnaires are used to generate behavior for student analysis. These two learning approaches have also been described as the "content versus the process approach" to learning. The content approach emphasizes the recall of facts, while the process approach stresses the use of "information" in generating alternative and integrated thinking-behavior.

Both faculty and student participants expressed a strong desire for more opportunities to enhance their decision-making skills using case-based exploration and communication. A constraint to this is the lack of business cases written in Chinese and the small number of cases dealing with Chinese brands, markets, and organizations. How to address these realities was one topic discussed in a post-exchange debriefing session.

CHALLENGE

The exchange initiative between two Chinese universities showed the role of case-based teaching and learning in education that has real impact. Students and faculty report a changed atmosphere in "teacher--learner" relationships. Also highlighted is what has been called "paradox work"--addressing how educators and students come to understand, build on, and even apparent contradictions. To do so requires a significant level of understanding self (i.e., self-knowledge, self-esteem and self-security), an appreciation of experimentation (i.e., creative, purposeful play), and a tolerance for ambiguity. All these elements are found in interactive, case-based education.

The primary result was one of growth; growth on both a personal or professional level and an institutional or academic level. This is vital since business schools play an important role in a nation's drive toward greater economic development and cultural modernization. Such a result, though, comes with and through a level of discomfort. As described by Whitely (1992) the transition from a collective and collaborative comfort zone to a more confrontational and contemporaneous "courage zone" is a journey more international business educators should seek to employ.

To this end, members of other academic institutions are invited to join the authors in expanding and enacting this vision. We propose the exchange of ideas through electronic, print and vocal dialogue. Messages, discussion of related pedagogues, and reports of similar economic development initiatives, may be exchanged with the authors via electronic mail using the addresses listed in the paper. The findings, lessons, and advice forthcoming from such activities will be shared with interested parties at their request. We invite you to join the learning challenge facing China and other nations in their quest for economic and managerial development.

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RESEARCH IN DEVELOPING COUNTRIES: AN EDUCATIONAL EVALUATION

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Abstract

Developing countries of the world are characterized, *inter alia*, by poor productivity, high unemployment, high birth rates, low gross domestic products (GDP) per capita, an unhealthy brain drain and poor educational systems.

In order to survive and prosper developing countries of the world need a dramatic increase in wealth creation. They need investment in science and techno-logy in order to create more jobs. They need scientists and technologists who are well-qualified and capable of converting their entrepreneurial ideas into wealth creation. They need international leaders/managers with the necessary flair and skills to compete in the global village. To become a player in the global scene and to be successful inter-nationally is the only way to survive.

To obtain this developing countries need researchers who can, through research, give them a competitive edge in science and technology. They need researchers who are able to develop educational systems that can compete with the rest of the world. Research should focus on global competence and on development and empowerment of researchers.

In this paper the Republic of South Africa was used as a main reference of the developing countries.

INTRODUCTION

Kenneth Hoover (1998), a 20th century social scientist suggests: "Knowledge build on evidence, and captured in clear transmissible form, makes for power over the environment." This paper examines the nature and scope of scientific research in developing countries. It suggests the need for knowledge to develop appropriate research designs and stresses the need for knowledge to develop appropriate research designs and appropriate responses at the data collection and data interpretation stages to aid and assist in problem identification and solution formulation in developing countries.

Research involves the diagnosis of information needs and the selection of relevant interrelated variables about which valid and reliable information is gathered, recorded, and analyzed. It is defined as the effort to extend certified knowledge by developing concepts and testing hypotheses, the gathering and analysis of meaningful data, and the critical evaluation of the original concepts and premises. Scientific research criteria usually stress objectivity, reliability, definiteness and precision, coherence or systematic structure and comprehensiveness. Research approaches and techniques in undeveloped countries vary widely and often lead to inappropriate conclusions.

Research can take many forms, but scientific inquiry is considered a universal characteristic. This systemic inquiry is typically manifested in a series of stages. The stages are: (1) defining the problem, (2) planning a research design, (3) planning a sample, (4) collecting data, (5) analyzing the data, and (6) formulating conclusions.

Research in underdeveloped countries poses all the problems encountered by researchers in developed countries, but at a more extreme level. Also, there are some issues which are generally inconsequential in developed countries, but which are extremely significant in underdeveloped countries. Diversity is one of the most striking features of the developing world. Such issues as religious observances and taboos and culture norms, language variety and literacy levels, inadequate sampling of the population, and costs of data collection are seen as areas of contrast, and typically considered challenging to the researcher.

Depending on how they are managed, developing countries, such as for example South Africa (see Table 1), may be seen to be on the brink of new and exciting frontiers. There appears to be no doubt that more will have to be done with less. Facing this challenge necessitates a closer look at the realities of existing processes and procedures, as well as considering a paradigm shift in views on crucial issues such as education and research. Achieving ultimate success depends largely on an honest appraisal of the *status quo* of the particular developing country.

TABLE 1
SOUTH AFRICA'S COMPETITIVENESS RANKINGS

	1993	1994	1995	1996	1997
Internationalisation	32	35	38	39	46
Finance	23	26	27	31	36
Infrastructure	32	37	30	32	33
Management	32	35	38	40	37
Science and Technology	29	28	31	34	40
People	46	46	46	46	46

Reference: World Competitiveness Yearbook IMD, Lausanne, 1997

Developing countries of the world are characterized by many ills such as, *inter alia*, poor productivity, high unemployment, high birth rates, low gross domestic products (GDP) per capital, an unhealthy "brain drain" and poor education systems. In order to survive and prosper developing countries need a dramatic increase in wealth creation. To be able to partake in wealth creating science and technology activities they need to become involved in the global market - to be successful internationally is the means to survival and prosperity.

The ability to compete in the global market will necessitate developing countries to invest in educational systems; in research (especially in science and technology wealth creating activities); and in empowerment of researchers.

Research purely for the sake of research is something developing countries cannot afford, therefore research can be expected to make a contribution of some nature to the survival, improvement, or future prosperity of the country concerned. No longer can developing countries allow their best brain-power to continue along the lines of "publish or perish," but researchers will have to accept the responsibility and challenge to convert research to some form that assists in wealth creation.

THE IMPORTANCE OF RESEARCH FOR DEVELOPING COUNTRIES

RESEARCH

Stated very broadly research may be seen as "...systematic investigation..." which should lead to the attainment of some goal, the solution of some problem, or the discovery of some possible new truth. In developing countries a type of reactive research could centre on aspects that could alleviate conditions that contribute to poverty, or research may proactively focus on initiatives which could provide a competitive edge to bring money into the country.

Reactive Research

Reactive research done on prevailing conditions of a developing country by some institutions of education may contribute valuable information to the community on the topic (for example agriculture) and thus aid situations as well as the development of the people. In this respect it may be beneficial to establish links with and obtain cooperation from countries where research has already been established. In this respect existing know-ledge, joint development and research projects applied to the need of the community may be advanced.

Proactive Research

This type of research focusses more on exploiting opportunities, that would allow a country to become a participant in the global economy. In this manner funds can be channeled back into a country and this would allow a country to flourish.

What is important, however, is that, to be able to do this an infrastructure of competent and able human resources, systems, processes and procedures in the fields of education, management and research is a prerequisite to sustain any of the endeavours of wealth creation.

The research endeavour is multidisciplinary by nature. It draws on many disciplines such as economics, anthropology, geography, history, language, law, statistics, and demography to aid in the research endeavour. Failure to become involved in successful research endeavours can lead to economic isolation, declining economic influence and a deteriorating standard of living for a nation's citizens. Opportunity awareness and knowledge acquisition hold the promise of improved quality of life and a better society, even leading, as some believe, to world peace. It provides growth of international trade and investment and presents more opportunities for expansion, growth, and income of the nation. As a result of increases in research, innovations can be developed and disseminated more rapidly, human capital can be used better, and financing can take place more quickly. It offers both opportunities and challenges to countries, companies, and individuals in underdeveloped areas.

THE PROBLEMATIC OF DEVELOPING COUNTRIES

To understand the importance of research for developing countries, one should evaluate the competitiveness of the developing countries in the global village, because that will point to the importance of research and the areas in which research is really needed. In Tables 2 to 5 the competitiveness of the developing countries in the global village is compared with that of the rich countries, the eastern tigers and the european tigers. An evaluation of some of the data from the world competitiveness report (1997) is as follows:

World Competitiveness Index (WCI)

Out of the 46 countries evaluated in the report the developing countries filled the last three positions in the world competitive index (see Table 2); faring even worse than the three countries from the former communist east block. Lots of research will have to be done on how to improve the competitiveness of these countries.

TABLE 2
RANKING (OUT OF 46) FOR WORLD COMPETITIVENESS AND PRODUCTIVITY

COUNTRIES	1 WCI		2 Internation-alisation		3 Science and Technology		4 Human Resources	
	1996	1997	1996	1997	1996	1997	1996	1997
RICH								
USA	1	1	2	1	1	1	15	12
Finland	15	4	15	13	8	6	3	1
Switzerland	9	7	19	26	4	5	10	6
Germany	10	14	9	7	3	3	12	19
UK	19	11	8	4	16	14	27	23
EASTERN TIGERS								
Singapore	2	2	1	2	12	8	8	5
Hong Kong	3	3	4	3	20	18	22	13
Japan	4	9	14	32	2	2	4	11
Taiwan	18	23	26	30	17	10	16	21
EUROPEAN TIGERS								
Czech Republic	34	35	34	24	43	44	28	24
Hungary	39	36	30	21	36	28	33	29
Poland	43	43	42	44	37	42	30	35
DEVELOPING								
Venezuela	45	45	44	42	38	45	43	42
Russia	46	46	45	37	31	26	41	41
South Africa	44	44	39	46	34	40	46	46

1. *World competitiveness index*
2. *Participation in international trade*
3. *Science and technology capacity, and success in basic and applied research*
4. *Availability and qualifications of human resources*

Reference: World Competitiveness Yearbook IMD, Lausanne, 1997

Internationalisation

As with the WCI the developing countries are faring badly in the internationalisation arena (see Table 2), especially South Africa which has dropped from position 39 to position 46. Research in competing internationally is of the utmost importance. Training in international management will have to receive immediate attention.

Science and technology

The performance of the developing countries in the above-mentioned aspect (Table 2) is relatively poor, and with the exception of Russia, they are not improving with time. Their basic and applied research efforts appear to be unsuccessful. A complete research culture change is needed because it is accepted that science and technology are the real creators of wealth. In the short, medium and long term research in science and technology should be focussed on wealth creation in the first instance and only then on international recognition, publications, and other secondary factors.

Human Resources

The human resources factor is one of the worst categories (Table 2) for developing countries. Contributing to this is that people with the desired qualifications are difficult to come by and those trained in the desired disciplines are usually poorly trained. Many unskilled and half-skilled people are available, but they are usually not interested in further training because they are protected by powerful trade unions. Meaningful research on initiatives to improve the quality of human resources is of the utmost importance for the developing countries if they wish to survive. Wealth creation by means of science and technology initiatives, and done by suitably qualified people is inseparable.

Worker motivation (Table 3) is not actualized in developing countries, *inter alia*, because of the poor attitude demonstrated by many managers. As unemployment is very high (Table 4) in developing countries some irresponsible managers simply replace workers at will if they are not satisfied with their work performance. Meaningful development and empowerment of workers that will lead to more motivated workers is not really in place. Because of poor leadership many well-educated workers of developing countries leave these countries. This is manifested in the "brain drain" factor (Table 4) which is worst in the developing countries.

Education

Education in the developing countries (Table 4) is of an extremely poor quality and does not satisfy the needs of a competitive economy. This is shown in the poor rankings achieved by the developing countries in the education sphere. Much could be done for the upliftment of a country economically if the educational basis is sound. A country like Hungary, for instance, is expected to prosper in the near future because they have improved their education ranking to tenth out of forty-six.

TABLE 3
COMPETITIVENESS FACTORS - PART 1

COUNTRIES	1 Worker Motivation	2 R + D Expenditure	3 Technology development	4 Science Education	5 S + T Youth
RICH					
USA	18	2,47 (5)	25	31	34
Finland	14	2,32 (7)	2	8	4
Switzerland	2	2,68 (3)	16	6	9
Germany	20	2,28 (9)	40	16	19
UK	23	2,19 (10)	8	41	44
EASTERN TIGERS					
Singapore	6	1,13 (22)	1	1	1
Hong Kong	13	- (-)	11	14	20
Japan	1	2,84 (2)	5	10	25
Taiwan	12	1,81 (13)	13	5	2
EUROPEAN TIGERS					
Czech Republic	35	1,12 (23)	34	20	41
Hungary	39	0,75 (30)	21	3	5
Poland	44	0,50 (32)	44	30	13

DEVELOPING					
Venezuela	38	0,47 (35)	38	46	45
Russia	46	1,11 (24)	46	26	42
South Africa	45	0,80 (28)	22	45	46

1. Ranking out of 46 2. % of GDP. Ranking in brackets
3. Ranking out of 46 4. Ranking out of 46
5. Interest of youth in science and technology. Ranking out of 46

TABLE 4
COMPETITIVENESS FACTORS - PART 2

COUNTRIES	1 Braindrain	2 Skilled labour	3 Unemployment	4 Education
RICH				
USA	1	25	5,40 (14)	24
Finland	19	5	16,10 (42)	3
Switzerland	2	8	4,60 (12)	4
Germany	10	3	9,00 (30)	13
UK	18	27	7,60 (25)	29
EASTERN TIGERS				
Singapore	8	34	2,70 (6)	1
Hong Kong	29	36	2,60 (3)	21
Japan	3	24	3,40 (9)	31
Taiwan	17	16	2,60 (3)	15
EUROPEAN TIGERS				
Czech Republic	15	43	3,50 (10)	23
Hungary	42	22	10,60 (35)	10
Poland	37	31	13,60 (41)	28
DEVELOPING				
Venezuela	43	45	11,10 (36)	46
Russia	45	40	9,30 (31)	44
South Africa	46	46	29,30 (45)	45

1. *Well-educated people stay in their country*
2. *Availability. Ranking out of 46*
3. *% of labour force (ranking out of 46)*
4. *The educational system satisfies the needs of a competitive economy. Ranking out of 46*

Reference: World Competitiveness Yearbook IMD, Lausanne, 1997

Taking the above-mentioned factors into consideration it seems imperative that developing countries, to be able to compete internationally, should invest heavily in education, inter-national management and research.

THE STATUS OF RESEARCH IN DEVELOPING COUNTRIES

One might wonder what comes first: prosperity and then research, or research and then prosperity. The tendency in developing countries is to cut expenditure on issues such as the arts and research when money becomes scarce (refer to Table 3). Where research is happening one might expect greater development and prosperity (and especially in the global market); however, this is dependent on the relevance and viability of the research conducted and the ability of the country or infrastructure to institute, develop and/or sustain the research recommendations.

THE ATTITUDE OF RESEARCHERS IN DEVELOPING COUNTRIES

A questionnaire to determine perceptions was sent out to researchers in the academy and in industry. The researchers were mainly from the Gauteng area in South Africa which is regarded as the most prosperous in the country.

The two questions were to determine:

- The most important goals with respect to research.
- The most important problem encountered by researchers.

The questionnaire is shown in appendix A and the results in appendix B.

For the academy (33 responses) the five most important goals of research are the following: (mean score out of 10 in brackets):

1. To create new knowledge (8,43).
2. To develop new methodology (7,74).
3. To publish in scientific journals (6,96).
4. To enhance international status (5,95).
5. To create wealth (5,65).

For industry (23 responses) the five most important goals of research are:

1. To develop new methodology (8,08).
2. To create new knowledge (7,92).
3. To create wealth (7,62).
4. To promote productivity (7,23).
5. To publish in scientific journals (5,76).

In a developing country where economic growth is of prime importance for survival, one would expect creation of wealth and increased productivity to be the most important goals of research. Unfortunately this is not the case, because the academy put wealth creation in only position 5.

Industry is more practically inclined, putting wealth creation in position 3 and productivity promotion in the number 4 position. Perhaps this is an indication that the developing countries do not regard research as a powerful tool in wealth creation.

For the academy the five most pressing problems experienced in research are (mean score out of 9 in brackets):

1. Lack of funds (7,09).
2. Lack of time (6,91).
3. Lack of laboratory facilities (6,65).
4. Lack of suitable instrumentation (6,13).
5. Lack of infrastructure (5,22).

For the industry the five most important problems in research are:

1. Lack of funds (8,38).
2. Lack of peer researchers to consult (6,15).
3. Lack of time (6,15).

4. Lack of suitable instrumentation (5,23).
5. Lack of laboratory facilities (5,08).

Interesting is the fact that although both the academy and the industry stated that a lack of funds is their main research problem, neither declared that their main research goal is to create wealth in order to counteract this lack of funds.

The research culture held by developing countries will have to change. Developing countries will have to accept that science and technology are the main instruments for wealth creation and if they do not invest in science and technology they will not be competitive internationally. This has been proved by the world competitiveness report (1997); for example basic research in South Africa does not support long-term economic and techno-logical development (South Africa scored 4,40 out of 10). Also in an evaluation of scientific and technological capacity together with success of basic and applied research, South Africa was ranked 40 out of 46 in 1997. (In 1996 South Africa was rated 34th out of 46).

TRAINING OF RESEARCHERS IN DEVELOPING COUNTRIES

Training of researchers is usually embedded in post-school studies at an institution for higher education. Although some form of research methodology may be part of the third year degree/diploma study it actually gets a bigger focus in the 4th or 5th year of study where students are being prepared for research at a Masters or Doctoral level. Very often this is the only exposure prospective researchers get and this may also include lecturers who are responsible for encouraging students to do research. Some lecturers venture into the domain of research and although some become really proficient many are satisfied with a mediocre research design.

In the Republic of South Africa, until recently, research was seen as the province of the universities but recently the Technikons have also started giving greater emphasis to research - and the type of research conducted there is more of an applied or developmental nature and often requested and funded by industry.

Persons who are lucky enough to be employed by research institutions such as the Human Sciences Research Council (HSRC) or the Council for Scientific and Industrial Research (CSIR) in the Republic of South Africa actually get a very good grounding in research. Not only are they exposed to research issues on a daily basis but they also are encouraged to attend lectures/seminars on research issues and often receive excellent guidance and one-to-one tuition from an experienced mentor. Institutions of higher education would do well to employ persons from these institutions to help with training in research methodology.

Furthermore a system of categorization of researchers has been put in place. This attempts to place researchers in categories based on their experience and expertise. This type of categorization is institution based or can happen on a national level.

FUNDING OF RESEARCH IN DEVELOPING COUNTRIES

In a typical developing country like South Africa, funding of research is done by government/government institutions and/or by the private sector to a lesser degree.

In the case of the academy/faculty funding is obtained from government subsidized institutions like the FRD (Foundation for Research and Development) and the HSRC (Human Sciences Research Council). The FRD specializes mainly in the funding of science and technology, while the HSRC specializes mainly in the field of the humanities. For certain research projects in science and technology that have practical implications in the short and medium term, faculty can also get funding from private institu-tions like Escom (Electricity Supply Commission), AECI (African Explosives and Chemical Industries) etc.

The ideal situation would be that researchers would produce research that they are capable of selling and in this way finance themselves. This would take a large burden from the shoulders of the taxpayer. It would even be better if the research is of such a high quality that it could be sold internationally because the developing countries have too little money available inter-nally to satisfy the needs of their populations. The money so earned can release the pressure on the domestic economy and on the taxpayer.

EVALUATION OF RESEARCH IN DEVELOPING COUNTRIES

Five categories of criteria for evaluating the success or failure of research effort have been suggested in the literature by Suchman (1967). The first category suggests effort. This involves what was done and how well it was done and uses such criteria as the quantity and quality of activity occurring in the research effort. Performance criteria relate to measuring the results of efforts rather than the effort itself. In developing countries such questions as the following may be asked: What changes occurred? Were these the intended changes? Were they of the desired magnitude?

The third criteria concerns the adequacy of a performance given the total need. A program or activity may have considerable impact, affecting markedly the thoughts and action of those it touches; it will be judged ineffective if it is so designed that this impact is confined to a small segment of the total population. The fourth criterion is efficiency. This is concerned with the evaluation of alternative methods in terms of cost. The final criterion concerns the issue of process. It involves the analysis of the means in which a research program achieves whatever effects it may have. It calls for a total review of research activity and the accomplishment of objectives.

CONCLUSIONS

From the international bench marking published in the "World Competitiveness Report" of the IMD and from the above-mentioned questionnaire (although very limited in scope) the following appears evident:

1. Many researchers in poor developing countries have no research philosophy, no research vision, no clear research goals. In most cases research is carried out for the sake of research with no regard to global competitiveness, wealth creation, etc.
2. There appears to be either a total lack of research evaluation or wrong and unimportant parameters are used to evaluate the results of research. In these poor developing countries the emphasis should be on how the research influences the economy positively, how it contributes to wealth creation, how it contributes to global competitiveness, etc.
3. There is a real need for research in the poor developing countries in disciplines that are essential for the survival of the countries. These countries need research in how to improve the poor education system, how to improve the contribution of research in advancing the economy, how the quality of our science and technology can be improved, etc.

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APPENDIX A
QUESTIONNAIRE ON RESEARCH AND DEVELOPMENT

(1) In your opinion rate the importance of the following goals of research from 1 to 10. 10 is very important and 1 is the least important. The goals of research are:

	Rating	Example
1. To publish in recognized scientific journals	......	10
2. To publish in popular journals	......	7
3. To create new knowledge	......	9
4. To develop new methodology	......	8
5. To create wealth	......	1
6. To enable the researcher to give lectures at local symposia	......	5
7. To enable the researcher to present his work overseas	......	6
8. To increase the international status of the researcher and his organisation/country	......	4
9. To enable the researcher to be promoted	......	3
10. To increase productivity	......	2

(2) Please rate the problems encountered by researchers from 1 to 9 (1 = least serious, 9 = the most serious).

		Example
1. A lack of funds	......	9
2. A lack of time	......	2
3. A lack of interest from his colleagues	......	4
4. A lack of good laboratory facilities	......	6
5. No recognition for good work/research	......	8
6. No freedom to do research you would like to do	......	1
7. A lack of suitable instrumentation	......	7
8. A lack of infra structure like technicians, secretarial services, etc.	......	3
9. A lack of peer researchers to consult	......	5

APPENDIX B
RESULTS OF THE QUESTIONNAIRE

Goals of research are:	Academy (n = 33)			Industry (n = 23)		
		s	R		s	R
1. To publish in scientific journals	6,96	1,89	4-10	5,76	1,01	5-8
2. To publish in popular journals	2,96	1,99	1-7	3,00	1,53	1-5
3. To create new knowledge	8,43	2,35	1-10	7,92	2,50	1-10
4. To develop new methodology	7,74	2,65	2-10	8,08	2,29	2-10
5. To create wealth	5,65	3,08	1-10	7,62	2,69	1-10
6. To give lectures at local symposia	4,52	1,97	2-10	4,00	1,63	2-7
7. To give lectures overseas	4,48	1,93	2-8	3,69	1,75	2-8
8. To enhance international status	5,95	1,97	2-10	5,00	2,52	1-9
9. To facilitate the promotion of the researcher	2,96	2,44	1-10	2,00	2,45	1-10
10. To promote productivity	5,26	2,60	1-9	7,23	2,05	3-10
Problems encountered by researchers		s	R		s	R
1. Lack of funds	7,09	2,07	2-9	8,38	0,77	7-9
2. Lack of time	6,91	2,23	1-9	6,15	2,73	1-9
3. Lack of interest from colleagues	3,39	1,62	1-6	3,00	1,23	1-6
4. Lack of laboratory facilities	6,65	1,75	4-9	5,08	2,02	1-8
5. No recognition for good research	3,74	2,22	2-9	2,92	1,55	1-6

6. No freedom to do the research you like	2,40	2,16	1-9	3,15	2,27	1-8
7. Lack of suitable instrumentation	6,13	2,05	1-9	5,23	2,31	1-9
8. Lack of infrastructure	5,22	2,02	1-9	4,62	2,69	1-9
9. Lack of peer researchers to consult	3,74	2,03	1-8	6,15	1,86	3-9

= mean s = standard deviation

R = Range = lowest value - highest value

REFLECTIONS FROM THE HEART: DELIBERATIONS AND CONTEMPLATIONS OF TEACHERS OBSERVING THEIR PEERS

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Abstract

"I spent little time reflecting on my teaching...but after observing my colleagues I played my mental film weighing what went wrong and what was done right in this class...I find that reflection plays an increasing role in my professional life now." It seems that most reflections are a mental playback of the day, the kind that many teachers experience. They guide toward different ways of applying what we know based on past events, thinking of solutions to problems, inspiring new ideas, and meditating on an uncomfortable circumstance in the hope of feeling better about it. Our understanding of reflections as a teaching and learning tool take our memory back to that time we invest in the classroom, interacting with the students, with other teachers, with administrators, with parents, and overall, interacting with our own mode of delivering the information. Through this process it becomes clear that reflection is a crucial aspect of learning and consequently necessary for better teaching. As a teacher becomes more centered on how he or she teaches and how the students learn, the teacher can better focus on ideas, thoughts and reflections.

INTRODUCTION

Another form of reflection occurs as teachers observe their peers teaching. Observing their behaviors, ways of conducting a class, modes of organizing and delivering a lesson, managing the classroom disruptions, administering the activity time, taking advantage of those "teaching moments," help them assess what they do. Schon [1988] refers to this behavior as "reflection on action." The peer observations invite others to examine each teacher's role in the classroom, how well his teaching performance is, and how suitable the teaching strategies are to individual students. As Saphier & Gower [1997] indicate, "teaching is one of the most complex human endeavors imaginable." (p.3). The profession of teaching involves not only skills, but attitudes toward it. When a teacher observes others teaching and reflects about it, she is giving herself the opportunity to meditate and contemplate on what is being done and how to improve the students' ability to learn. This piece of the process of reflection produces new understandings which can then guide future learning.

Being involved in reflection is an important part of learning [Fedele, 1996]. But, also reflecting by observing others is an important element of the teaching process. So many good ideas and topics can come during the reflective time. Of course, we can feed our teaching styles by observing those activities and strategies that work and those that do not work in others' classrooms. In this research, we are introducing teachers observing peers and reflecting on their observations. The analysis is based on the parameters of teaching presented by Saphier and Gower in their book *The Skillful Teacher* [1997]. In addition, the teachers' observations which took place in 20 Chicago public schools, are structured following the format preconceived by Saphier [1993] in his book *How to make supervision and evaluation really work*.

THE PARAMETERS OF TEACHING

The art of teaching, a complex venture, is comprised of a multitude of learned skills. A skillful teacher is one who is knowledgeable and aware of the complexity of his job. Skillful teachers should strive to achieve the main goal of creating an atmosphere that is productive and inducive to social and intellectual growth for their students. These people are conscious and methodical about their practices. They juggle choices, self-regulate their teaching, and get feedback to promote positive student outcomes. They monitor their teaching and its effects on learning. Their specific behaviors and/or skills, as displayed by different individuals, are those that are observable and always leave room for improvement. Specific areas or parameters in teaching measure these skills.

The classroom observations the researchers made were based on and adhered to, as much as possible, the fifteen parameters of teaching discussed by Saphier and Gower [1997] and grouped, based on the size of the knowledge they contain, into *moves*, *patterns*, and *abstractions* of teaching. These parameters can also be classified as Management parameters, Instructional Strategies parameters, Motivation parameters, and Curriculum Planning parameters.

The management parameters include the basic and prerequisite skills necessary for good teaching to take place in a classroom, supporting and making possible for good instruction to be performed. The instructional strategies come into play in the interaction of teacher and students, while the class is in progress, thus designing the instruction that goes on in the classroom. These are the ones that bring the content or "meat" so to speak, of the lesson to the students in class. The motivational parameters are the ones that attract and capture the attention and interest of the students to the lesson strategies and make them stay with the lesson, empowering instruction. Ultimately, "staying put" is what brings forth successful learning in students. The curriculum planning parameters are the skills that contain what the authors call "*the blueprints for instruction*." They stand above all the other parameters and support each and every one of them. Teaching is thus, the combination of all those fifteen parameters. They conform what effective teaching or instruction and learning should be and what all teachers should strive to achieve, if they believe, that all students can learn, demanding academic material at high levels of achievement.

Starting with the assumption of a firm and solid foundation of essential beliefs, the parameters of *Attention*, *Momentum*, *Space*, *Time*, *Routines*, and *Discipline* also fall under the group Management parameters. Management parameters are the foundation of teaching for, if they are not handled appropriately, or they are absent from the learning and teaching processes in the classroom, learning cannot take place. *Clarity*, the *Models of Teaching*, and the *Principles of Learning* used effectively and believed in by the teacher fall under the group of Instructional Strategies or parameters, while the *Classroom Climate*, the *Personal Relationship Building* between teacher and students, as well as the *Expectations*, fall under the Motivational parameters. Finally the *Learning Experiences* or *Activities* that take place in the classroom, the *Design of the class* and the teaching process, the *Objectives* the teacher wishes to accomplish, and the *Evaluation* of the learning experiences, fall under the group of Curriculum Planning parameters.

NARRATIVE OBSERVATIONS

The theoretical and practical foundations of the narrative observations are based on the work of Saphier [1993]. He suggests four basic elements which must be present in appropriate balance for writing about observed teaching. The narrative components are a proportion of claims, evidence, interpretations, and judgments:

- *A claim is a generalization about a person's teaching.*
- *Evidence is a literal description of something the observer heard or saw to back up the claim.*
- *Interpretations explain why evidence does, indeed, support the claim.*
- *Judgments let the teacher know what the observer thought of the observed event."* [Saphier, 1993, p.39]

Who is A Reflective Teacher?

We believe that reflecting on teaching takes place when a teacher knows his students well, their likes and dislikes, their ethnic and cultural background, their personalities, and respects and validates their languages and cultures. Also, a effective reflective teacher knows the resources available in the school, the district, the community, and the families of his students that he can tap to improve and achieve the objectives of the educational program. A reflective teacher provides for a variety and engaging activities in which students can have many opportunities to learn by listening, speaking, reading, writing, and having hands-on experiences on the content that is being taught. Effective teachers must know the difference between teaching and learning, allow time for active teaching in their classrooms, use a repertoire of group arrangements to do class work that may go from lecturing, to small group discussions and projects, and to individualized instruction. They use many learning experiences in their classes, cooperative learning, multisensory and multiple intelligence classroom methods, and outside world learning activities such as field trips, museum visits, etc.

Reflective teachers often plan their lessons for all their classes, using clearly stated goals and objectives, are constantly evaluating their students' performance, preferably by using portfolio assessments, allot time in appropriate ways, are organized, flexible, and manage classroom routines efficiently. They establish clear rules that are understood by all students, do not take much time from true active teaching (they keep students engaged for at least 75% of the time allocated for academic learning), and match or tailor the curricula and their delivery of instruction to the groups and to particular individuals [Saphier & Gower, 1997].

Effective reflective practitioners help develop the students' fullest potential, supporting them in becoming lifelong learners, leaders, independent thinkers, and problem solvers in real life situations. They tap into their students' diversity and use it as much as possible in class, to provide relevance in their classes, purchase relevant textbooks and materials, and any other activities that will promote successful learning.

Finally, and even more important, a reflective teacher is aware that "taking time and energy to reflect on, apply, implement, and improve one's work are essential to understanding the process itself" [Simmons, 1994, p.23]. For this reason, observing others teaching practices helps to provide more input about their own. Under this capacity, teachers may realize the critical aspect of their own reflections. They may find that the reflection time is productive if they take time to properly reflect. Killion & Todnem [1991] said that "busy people typically do not engage in reflection. They rarely treat themselves to reflective experiences unless they are given some time, some structure and the expectations to do so" (p.15). Teachers, too, are busy people. By providing the opportunity to observe their peers, their reflections increased and therefore their work performance seemed to improve. This fact is enough to encourage teachers to observe their peers and take time to see themselves in the mirror of others' practices.

Classroom Observations: The First Lesson

The compilation of the classroom observations by teachers was completed by the end of November, 1998. Twenty two teachers were involved in the process of observing their peers. They are all classroom teachers with different backgrounds and years of experiences, teaching in the Chicago public school system. The observers were trained during 14 weeks, a semester prior to conducting the observations. The training consisted of the application of the teaching parameters in the classroom and the writing of the narrative reports. This latter process was critical to the research. We expected the observers (teachers) to comment on all the significant instructional events he/she observed, free of the restrictions of limiting categories. In fact, we encouraged the use of the fifteen parameters of teaching as the basis of their observations. The flow of teaching-learning episodes and their relation to one another was only possible by applying their exposed knowledge on the teaching parameters. The observers followed the basic structure of the classroom observation write-up composed by claims, evidence, interpretations, and judgments. During the data collection procedures, each teacher observed four peers. The sample of observations climbed to 88 classroom observations. For the purpose of this paper, we are presenting a selection of eight classroom narrative observations. In collecting and compiling the observations, each subject participant followed these directions: (1) *setting up the tone of the observation*, asking for appropriate permissions from the administration and the teachers in order to inform them about the research objective of the observations; (2) *planning a pre-conference* with the teacher, making the teacher comfortable with the process by asking them what they would like to specifically be observed on, what were their weaknesses and/or strengths; (3) *observing the process*, sitting in the classroom during 45 minutes writing up literal notes of what transpired during the observation; (4) *communicating the observations to the teacher* by providing specific evidence to back up claims.

Classroom Observations: The Second Lesson

After collecting the observations and doing their write-ups, the participants were asked to reflect on what they had observed and to compare and contrast their own teaching practices with those observed. The results of these reflections are gathered in this study.

All teacher observers were aware that observing the performance of a teacher only once or twice, for a limited amount of minutes in one or two days, did not really give the observer a complete and total picture of what that specific teacher knows and is able to do. With that in mind, the generalizations and recommendations that are expressed in this paper, in reference to each teacher observed, should be taken carefully and not as total and final indictments of any teacher in particular. This is just an exercise in theory and practice. This is just a compilation of observations which helped teachers reflect on their own teaching practices.

CLASSROOM OBSERVATION WRITE-UPS

Mr. R in the History Department

I met with the Principal of the school and the head of my department to ask for permission to do my observations before I talked to the teachers. I went to Mr. R's classroom and explained to him what I wanted to do. He agreed on the observation, told me the day to show up, and the material he was covering for that day. His class is history and is given during the second period. The school is a private, catholic, and for only girls school. As it is a norm, all classes should start with a prayer and so Mr. R prayed with the class. One of the notorious features and peculiar attributes that this teacher possesses is his style of teaching. People would describe him as a very enthusiastic and interesting teacher in his class. Some people may even say that he is like a comedian or even a clown type of teacher, in a very positive and professional way. As you pass by his classroom, you could hear his loud voice and all the excitement in his teaching. I wanted to experience this and see it with my own eyes.

I arrived to his class and after he finished with his prayer he started with, "where were we yesterday?", in a very happy mood. He was talking about Las Vegas, Nevada and continued with his lesson. To enhance his lesson he told a personal story about him getting married in that city, since that's one of the reasons it's famous for, and the girls listen to him with full attention. Mr. R continued with his story about him getting married in a very enthusiastic, almost funny manner. The girls started asking questions about how it was back then and how different the city was. With this introduction, Mr. R was able to get everyone's attention and at the same time complemented his lesson about that particular state. While he was into his lesson, he was walking around the class making sure everyone was behaving accordingly. The rules in this school are very strict and all the girls must follow these rules. Everyone is to be in full uniform and respect each other at all times. There was one student not seated in a proper manner, almost lying on her desk, and Mr. R said, "get some posture please." The student immediately obeyed the teacher as he continued with his class. He then introduced another state, Colorado. He highlighted the fact that this city is called "Mile High City." He showed a map to the students to make sure they knew where this state was. In giving this lesson, he kept adding current events from the daily news about this city that made students relate more to what he was saying or talking about.

Observer's Comments

In his class I was able to prove for myself everything I heard about Mr. R. His classroom management is very good. I was able to see how he teaches and his attention in his class kept the students' interest. I believe that Mr. R used the stories he told to keep the momentum from one topic to the other and the students were engaged by asking him questions. When he was teaching, he kept his voice projection at an appropriate level and it was like listening to a very motivated speaker. He was funny in giving his lesson and made the students laugh and participate at all times with him. The students appeared to be enjoying his class, participated, and asked questions about the topic. The discipline in his class was very good and he only had to say something once to a student for her to do it. The classroom was very conducive to education and was decorated with many pictures of presidents and insightful passages. The time of his class was good , since he started right after the bell and didn't waste time in starting the class. Mr. R's personal relationship building with his students was excellent. The respect was mutual. The classroom climate felt good. The students showed confidence when they were participating and asking questions. I truly enjoyed Mr. R class and I thought that I would like to be like him!

Mrs. Isabel, a Third Grade Math Teacher

The teacher was very knowledgeable of the content (multiplication tables) of the mathematics class she was teaching. She started her class with a review of the tables previously studied in class (the table for the numbers 1, 0, 2, and 10). She then proceeded to read out loud to the students a short reading of the Maya Indian's numerical system of small circles or dots and bars. She drew some of the Maya numbers on the chalkboard. The students were seated in straight rows and were attentive and responsive to the teacher's questions and prompts. The teacher proceeded to explain the multiplication table of the number 3 using realia. She had asked them to bring to class a little jar of beans and used them to demonstrate to the students that multiplication was a faster way to add things. She showed them individually to some students and they would try to answer the multiplication fact (e.g. 3 X 7 = ?) and also to the entire group. She used a variety of techniques to explain the lesson. She used the chalkboard to write the table for the number 3 and the students worked on some worksheets in which they completed the multiplication facts. After they spent about 20 minutes discussing the multiplication table of the number 3, they proceeded to study the table of the number 5 for the rest of the class. The teacher kept her students engaged in the lesson. She used a variety of manipulatives, such as beans, the chalkboard, worksheets, etc. The teacher demonstrated sensitivity towards the cultural and historical background of the students in her class. In presenting the reading about the Mayas and explaining who they were, how they invented the concept of zero, etc., the teacher demonstrated a deep knowledge and respect for the culture and the historical background of her students. Many of them seemed very happily surprised about what the Maya Indians had accomplished and seemed to feel very proud that they were from Yucatan and Central America. The teacher had very clear objectives. Not only she did explain to the students what they were going to do on that day, but all through the lesson, and even without checking her lesson plan book, she showed that she knew what her main purpose was at all times. When presenting my observations, I congratulated her for a wonderful class. I advised her to look into National Board for Professional Teaching Standards certification.

Observer's Comments

Mrs. Isabel is a very humane and conscientious teacher with much experience. She knows how to teach her students well and how to keep them interested in her lessons. She uses the students' previous knowledge and experiences to maximize learning in her classroom in a commendable manner, and she promotes a good learning environment in her classroom. She makes her students feel proud of their culture, their history, and their countries of origin. She demonstrated that she could tailor the learning experiences to the needs of different students by using a myriad of techniques and methodologies to convey the content of her lessons. Her classroom activities, curriculum planning, objectives, and immediate evaluation of proficiency demonstrated throughout that her lessons were extremely well thought out and solid. She knew what she was doing. Her lesson plan book was complete and up-to-date. I would recommend Mrs. Isabel review her classroom organization or management skills in terms of space (re-arranging the students' desks once in a while) and discipline strategies. There were two class disruptions by two separate students in two different situations during the class, and in both, all she did was to tell the students to pay attention and to sit straight.

Mrs. E, a ESL Teacher

The teacher began teaching a lesson in character development. She asked the students, "what do you think the story is going to be about?" Write down in your journals your predictions. She had the students read the story aloud. While they were reading, they would write the words on an index card that they didn't know. This demonstrates that the teacher manages students' time effectively. The teacher was very alert to the needs of the students. This can be seen through the attention the teacher took to guide students to write down the words they didn't know. She gives particular attention to Susan who is a bit confused. In addition, she tells Alex to "stay focused" and re-directs his attention to the place where the students are reading. She comes around to Susan and helps her by pointing at one of the words she had difficulty pronouncing. With this action she makes sure that Susan writes down all the words to better understand the content. Thus, she got Susan on track with writing the word on an index card. "Good job Susana." This shows that the teacher handles intrusions with a minimum of disruption to the flow of the lesson and maintains momentum of the lesson.

Observer's Comments

I found this observation to be very positive because it allowed me to look at a teacher with a classroom with educational differences and regardless of their lack of English skills, they were very positive and wanted to learn. I felt that Mrs. E had all students on task and involved and contributed to an active learning environment. While I honestly came away impressed with the active learning approach to instruction she used, I thought Mrs. E used her teaching skills to promote and provide an effective learning scenario. She maintained attention by maximizing time on task and administrated clarity of presentation through checking and probing for understanding. It's great to see bilingual education still alive today because according to many research studies, bilingual education is almost exterminated. I feel classrooms should be very relaxing niches for second language learners.

Mrs. J, a Physical Education Teacher

This observation was set up with Mrs. J and the lesson goals were discussed before the observation. She said that the lesson was going to consist of a class discussion on the definition on endurance, how it differs from person to person, how it can be improved, and how the heart responds to exercise. This to be followed by a ½ mile run. The discussion was held inside with 40 children sitting on the center circle in the gym. The total class time was 30 minutes. Mrs. J engaged the entire class in the discussion. She asked,"what types of physical things happen to the body when we run for an extended period of time?" This questioning provided an atmosphere of all children understanding the goal of the activity. My feeling is that when the children understand the "why" of a physical activity it is a motivating factor for them to give their best effort. Mrs. J had good control of the class. At one point she walked over to an individual she noticed bothering another during the discussion saying "Billy, keep your hands to yourself." She said this in such a manner that it kept the boy listening without disturbing the flow of the discussion. This was an excellent way to keep the discussion going without giving attention to Billy. Many times, a break in the discussion loses many of the children, in this case it did not. She was positive toward all responses. Her response to one answer, "Good answer Max. Gina, can you repeat what Max just said?" Therefore, all children were intent on listening to stay involved in the discussion. There were two reasons for this, one to get the positive response from the teacher. Also, because if she felt you were not paying attention she would call on you to repeat the answer. This showed good control of the class as well.

Observer's Comments

The parameters I felt she was strongest on were discipline, and personal relationships. The areas I feel that she needed work on were space and time. I was thinking that maybe the momentum of the lesson would have gone better if she had the entire lesson outdoors so the lesson could have flown from discussion to activity-demonstration. This would also have affected the time parameter because of the walk from gym to the running area was useless time. I enjoyed observing the lesson very much. The strongest points were the children interaction with each other during the discussion. I felt they supported one another responses and gained great knowledge about the activity and about the human body.

Ms. G, a Music Teacher

The lesson started at 8:50, the nine children came in the room with a additional child from their homeroom. It was an additional child's responsibility to take attendance up to the homeroom teacher. The first seven minutes of class were filled with confusion and a certain looseness. Ms. G did not seem to have an established set of routines. Students were continually interrupting Ms. G, who was getting her material organized, "I don't have a pencil!" "Hey where is my book?" This lack of routine got the class off to an unfocused start. The important first minutes of the class were taken up with administrative tasks instead of learning.

Students started their lesson with Ms. G sharing some limericks she had found at the library over the weekend. She shared three of the limericks with them, and with great amusement, the kids repeated them. Ms. G had made copies of them so each child had one to take home. Their homework was to share them with at least three people. "Except people in this room," added the teacher as Ryan laughingly turns around ready to tell Jose. Ms. G asked one of the students to put the book in the library section. The special library section of the room had three small tables against the wall. Some books were unattractively displayed and the bulletin board at the back showed pictures, reviews and activities from some of the students' favorite books.

The next activity was reading of the book Fortunately, Unfortunately. Ms. G said, "today we are going to read a book you are going to love, what do you think it is going to be about?" when nobody answered immediately, she said, "let me tell you," and then told them it was a collection about some events that are considered good turn out bad." She then read the short book, asking questions like, "what do you think will happen next?" and, "how do you think the character is feeling now?" When asking these questions Ms. G would often not give enough wait time. The lack of appropriate wait time took away the students' opportunity to participate in a meaningful conversation about literature, and also sent the students a negative message regarding Ms. G's expectations for the students.

After this book the teacher announced, " it is time for silent reading, everybody get a book." While everybody got a book and started to read, Ms. G did not give further directions. She did not make any objective clear, silent reading seemed to be an activity to be completed. With this lack of specific objectives Ms. G misses opportunities to underline critical learnings, make connections for students, and to check and evaluate student learning.

Observer's Comments

I shared with Ms. G my observations. She told me that she realized that she was not her usual self when reading the story to the students and had not used good judgment in waiting for the answers. She explained that she was somewhat anxious with having an observer, since she was a music teacher, who was now teaching reading, a subject area she does not have any previous experience teaching. I agreed with Ms. G and presented to her my observations, claims and evidence. In reflecting on what parameters she needs more work, I concluded that there are three areas: Routine/Momentum, Objectives, and Expectations.

Mrs. J, a Spanish Teacher

I contacted Mrs. J on Friday, October 30 after school and asked if I could observe one of her classes on Monday, November 2. She was thrilled. Before I could ask her if there was anything she wanted me to pay attention to, she asked me to observe her second year Spanish class and keep an eye on her pacing. I observed her third period of class. She was reviewing the grammar she had presented on Friday on comparatives. J. was aware that students may forget information over the weekend. Therefore, she asked a student to review his notes and state the formulas used in making comparisons in Spanish which she wrote *on the board for everybody to see. In doing this, she was able to get students to complete the grammar exercise smoothly. She is also aware that some students may not be "catching on" as quickly as others. Keeping this in mind, she asked those students that had "caught on" already to begin giving examples using comparatives before she asked those students who had not. By doing this, she made sure that the "slower" students were exposed to extra examples of what they are supposed to accomplish. She is also alert to discipline problems. When a student began shouting out answers, she gave him the "look" and told him "I am marking your oral participation grade a zero." thus, she kept class participation running smoothly. She was sensitive to students who had a hard time with the material. For example, she asked a student to make a comparison and he got stuck. Instead of making him feel uncomfortable by waiting for him to respond, she asked if somebody else could help him.*

Observer's Comments

Based on what I observed, I noticed that clarity was one of the parameters heavily used. Mrs. J asked students to recall information that had been presented the previous week by having them review their notes. Attention was another parameter used. When a student started yelling out answers, she immediately got his attention by looking directly at him and communicating the consequences for his behavior. Momentum was apparent. She anticipated asking those students who caught up quickly as others. The parameter of Principles of Learning was demonstrated when she asked the "quicker" students to serve as a model for those " slower." Expectations and personal relationships were demonstrated by her verbal expressions of "you know better than that" and "Oh, that's alright. All you need is a little help from your friends."

I think she did a nice job keeping things running smoothly throughout the class. She is great at making the students feel comfortable with new material and she is very effective in making sure that all students are understanding the material. In regards to her pacing, I thought she paced the lesson well. When I left, she was getting started on a different activity.

Ms. C., A Science Teacher

After informing Ms. C about my interest in observing her class, she invited me to be present at a Health Education lesson. She wanted me to observe the students' behavior as they received and reviewed information on sexuality, if they were receptive to the material in a mature way. Also she was concerned if she was delivering the information in a way that all students would feel comfortable.

The students were watching a videotape on the function of some body parts. They were making comments among themselves while watching it. After Ms. C said, "now we're going to review our past lessons." She had poster size pictures of reproductive male and female organs as well as other body parts. She was very confident while showing them to the group and asking questions. Even though the class was engaged in the lesson, there was side talking taking place. Apparently it did not bother the teacher since she never lost control of the group. She maintained students attention. When she asked questions most of the class answered out loud. When the side talking was too high, she said, " SSSSSS...very softly." This happened a couple of times and the students seemed to respond well to this teacher's mechanism.

She delivered the lesson, offering immediate feedback to the students. She answered their questions and tried to clarify their doubts. Ms. C taught most of the time from the front of the classroom, but she was in touch with the flow of all events. She was aware of the activity taking place in the back of the room. She told a student, who was the very last one at the corner, "if you cannot see from there, please feel free to stand up." The whole class stared at the student for a second. He said, "I am OK." "Good" - said the teacher, and continued with the class. Students constantly called out the responses and every time, she responded with feedback about the content of the comment and never gave the students the idea that they should wait to be called on.

Observer's Comments

After my observations, I talked to the teacher who seemed to be too alert to my comments and claims. I learned that her students had the freedom to voice out comments and opinions about the lesson content. They expressed their perceptions and beliefs, and opinions. I recall the article *Teaching Democracy by*

Doing It, which indicates that decisive issues do not have to paralyze schools. It happened in this classroom. The topic was very sensitive to the age and reactions of the students; however, they felt comfortable responding and interacting with each other and the teacher. I feel that the teacher presented the information in a very natural manner and that it helped the students cope with the challenges presented in the videotape. I would have used equal opportunity activities to assure that all students really participated and to give them clear expectations prior to class. Also, I think I would have tried to connect with old information they bring at the beginning of the class.

Mrs. V., a Writing Teacher

I spoke to Mrs. V, an experience first grade teacher, and asked if I could observe her classroom. She was open to the idea, but preferred that I go another day since she had several non-instructional activities planned for that day. Halloween was being celebrated and it was only a half day of class. We agreed to have the observation on November 5, 1998.

When I walked in I noticed that space was used to support the learning environment. Students sat at round and rectangular primary tables in the center of the room. The learners' centers, listening, writing, math, reading, and computer, were located throughout the room, but away from the students' tables. The general group active participation area had colorful charts, calendars and graphs. The students' work was prominently displayed throughout the room. The room is arranged to foster support for instruction.

Expectations were clearly stated. This was evident when she reminded students that they were going to try this writing activity independently. She reminded them that they have done similar activities together, but she knew they could now complete journals independently. She walked around to check how they were doing and praised them for their work. She had individual students read their entries and complimented them on their excellent work. Therefore, by using praise, encouragement and positive expectancy, Ms. V gave the students courage to try the activity independently.

She checked for clarity and understanding. When she walked around and asked recall questions such as "What are we writing about?" and as she walked them through the writing process, she asked comprehension questions, "What are we writing first?" A student gave her the date "11-5-98." She asked what 11 meant (month November), what 5 meant (5th day of the month), and 98 (the year 1998)?. Therefore, with the questions, she made sure they understood what they were doing.

Observer's Comments

I discussed with Ms. V how much I enjoyed the visit. I complimented her for an outstanding job. I commended her for how well she is able to manage the space in her room. I shared I felt that she clearly expressed her expectations, and she continuously checks for understanding. I also shared that what I enjoyed the most was the cooperative spirit that exist in her room. I encouraged her to continue keeping abreast of new practices. I thanked her for allowing me to observe good teaching practices.

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TEACHING BUSINESS ETHICS IN INTERNATIONAL COURSES

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Abstract

Globalization has increased the need for managers (and future managers) to better understand the various cultural and religious values that influence ethical decisions internationally. This paper examines the core ethical values of the major religions and how students can develop small cases that apply these religious values to common problems in global corporations.

INTRODUCTION

To respond to the needs of the global economy U. S. business school curricula has increasingly focused on internationalization. Many faculty teaching core courses in marketing, finance, management, and accounting have sought ways to integrate a global perspective. With the challenges of global business scandals making headlines in Italy, Korea, Indonesia, and Russia, this interest also has shifted to business ethics. Some times the scandals are so bad in some countries that entire governments are brought down. Unfortunately, other issues such as child labor abuse, piracy of intellectual properties, ocean pollution, nepotism, political and business corruption, often do not make the newspaper headlines. A recent study by the U.S. Department of Commerce indicates that the corrupt practices in international business are "widespread and growing" [Greenberger, 1995]. Transparency International (TI), a coalition against corruption in international business, contends that corruption is not merely a problem in third world nations, but is a threat to clean government in Europe as well [Holman, 1994]. Desai & Rittenberg [1997] suggest that multinational managers will be required to be more ethical if they are to be accepted in third world countries. From the corporate perspective no aspect of globalization is more difficult to deal with than business ethics; the struggle for ethical conduct gets more complex abroad [Duerden, 1995].

CURRENT PROBLEMS IN TEACHING BUSINESS ETHICS

Although 90% of U.S. business schools teach a course on business ethics [Schlegelmilch & Robertson, 1995], many students seem not to understand its connection without the integration of ethics into international business courses. Dunfee [1994] found that explicit coverage of international issues in business ethics is typically limited to only a small portion of the courses surveyed. In international business courses the void is even greater. A recent perusal of ten International Business and International Marketing texts gives scant discussion (usually a page or less) to business ethics. When these textbooks do discuss ethics, many emphasize bribery as a major challenge, but ignore other pressing ethical issues. Only Cateora [1996] even listed other possible ethical issues such as employment practices and policies, consumer protection, environmental protection, political payments and involvement in political affairs, and basic human rights and fundamental freedom. Other studies suggest that marketing professors need to make a more conscientious effort to expose students to ethical issues and discussions because of a high level of ethical challenges [Shannon & Berl, 1997; Pizzolatto & Bevill, 1996]. Many scholars claim that business schools and companies have an obligation to foster ethical codes. Mahoney [1990] suggests that a course in ethics is not enough, but material on ethics should be included in every course on the curriculum, including international business courses.

Why the gap between the needs of practitioners and the writers of international textbooks? Perhaps one of the reasons for this limited development on ethics in the international textbooks is that most business ethics textbooks approach the study of ethics primarily from a Western philosophical perspective with little or no reference to any religious context. A critique by a fellow philosopher, Andrew Stark [1993] suggests that philosophical ethics is too general, too impractical or too theoretical for many business people--(and perhaps for business textbooks writers as well). Olaso [1992] contends that the study of business ethics remains seriously flawed if one insists exclusively on the study of ethical theories or anachronistic problems.

The primarily Western philosophical approach "tends to create the false impression that ethics is almost exclusively a secular -- and largely white male -- preoccupation, and that morality primarily if not solely consists of adopting a disinterested, dispassionate, and impartial point of view where the primary index of morality is whether an action or its underlying motive can be universalized for a democratic and pluralistic society" [Palmer-Fernandez, 1996]. Business ethics textbooks tend to ignore most religious and cultural values of the West, but especially the Eastern philosophies and their basic values and virtues developed from their cultures and religious heritages. Vega [1997] suggests that American business schools need to overcome their "ethical chauvinism" in teaching a "universal" set of ethical standards that are strictly Western. She suggests that we need to become more sensitive to other religious/ethical approaches. Dunfee [1993] agrees that there is great dissatisfaction among fellow international ethicists of the current set of teaching materials available for coverage of international business

ALTERNATIVES IN TEACHING INTERNATIONAL ETHICS

Some leaders in business ethics have reintroduced the insights of various religious traditions to enable us to better understand the problems faced globally [Cavanagh, 1998]. Historically, religion was central to the marketplace in the West and remains central for many cultures in Asia, the Middle East, Africa, and Latin America today. Wines and Napier (1992) suggest that, based on cross-cultural research, the role of religious values is linked to management values and business practice. Clark & Dawson [1996] concur that religiousness is an important influence on ethical judgments. However, religious and moral training itself is inadequate unless taught in a way that applies values to decision making in business. Mead [1998] suggests that ethical instruction is most effective when trainees have been given religious and moral training since childhood and when the working environment is supportive of ethical behavior.

The purpose of this paper suggests that students -- and faculty alike-- need to understand the broad range of ethical issues in international business and the impact of different cultural and religious influences on ethical tendencies throughout the world. We will examine research on some of the international ethical issues and some of the core values that permeate differing philosophical and religious perspectives, not only Judaism and Christianity, but also Islam, Confucianism, Buddhism, and Hinduism. We also will suggest a method of using caseettes prepared by students in relating the common religious values to current international ethical problems.

CURRENT ISSUES IN INTERNATIONAL ETHICS

Solomon [1994] and Fritzsche [1997] identified ethical issues confronting international managers that include such issues of child labor abuse, discrimination, unfair compensation and other human rights issues, deception, improper bond and stock trading, theft of intellectual properties, exporting dangerous products (e.g. pesticides, drugs, cigarettes, etc.), environmental pollution (toxic emissions, chemical dumping, destruction of vast forests). The impact of these behaviors in developing countries are beginning to influence the personal and economic health of peoples in the developed countries as well. The fires in

Indonesia and pesticide abuse in Central America are just a few examples.

Some scholars suggest that U.S. businesses are obsessed with ethics and may consider ethical relativism as a way to deal with the distinct differences in moral beliefs and value systems of different countries and cultures [Vogel, 1993]. Practitioners such as Hollstein [1998] and Duerden [1995] warn against 'doing as the Romans do' in international commerce. Other scholars are beginning to observe the development of a moral pluralism across nations [Husted, Dozier, McMahon, & Kattan, 1996; Hoffman, Kamm, Frederick, & Petry, 1994]. They believe that global ethics emerge from the degree of agreement among societies, corporations, and other organizations that appropriate ethical frameworks and behaviors have developed for given situations [Buller, Kohls, & Anderson, 1991]. One attempt at improved ethical understanding was a recent development of an international code of ethics that attempts to incorporate the value systems of Europe, the United States, and Japan is the Caux Round Table Principles for Business [Skelly, 1995]. Unfortunately, this effort to set a world standard against which business behavior can be measured ignored a large segment of developing countries -- especially those influenced by Asian cultures and may have misrepresented some European value systems. Despite the growing trade with Asian countries, few studies have considered the effect of philosophical and religious traditions on national ethical values that influence the ethical mindset within their business community. Palmer-Fernandez [1998] suggests that "religion does provide powerful motives for moral action -- say, eternal reward and punishment, as well as the joy that comes from living a life in quest of the good or from a life of service to others."

RELIGIOUS IMPLICATIONS ON ETHICS

There is a long-standing tradition in Western thought that sees religion as a bolster for morality and equally long-standing belief among many religiously oriented philosophers that theistic principles have a foundational or validating role with respect to morality [Cottingham, 1994]. Mitchell [1970] suggested that religious belief, in its vaguest version, provides a kind of social cement, fostering an 'ethos' in which traditional moral values are respected. It is considered to be an important social institution that exercises control over beliefs and behaviors. Religion, at the very least, serves to keep people in line, but do all religions teach common moral precepts and ethics? The Dalai Lama [1984] offers the following view:

> I maintain that every major religion of the world -- Buddhism, Christianity, Confucianism, Hinduism, Islam, Jainism, Judaism, Sikhism, Taoism, Zoroastrianism - has similar ideals of love, the same goal of benefitting humanity through spiritual practice, and the same effect of making their followers into better human beings. All religions teach moral precepts for perfecting the functions of mind, body, and speech. All teach us not to lie or steal or take others' lives, and so on. All religions agree upon the necessity to control the undisciplined mind that harbours selfishness, and other roots of trouble, and each teaches a path leading to a spiritual state that is peaceful, disciplined, ethical and wise. DeGeorge [1986] and Gustafson [1975] concur with the Dalai Lama that there is only one ethics or morality. What is right or wrong for one is right or wrong for all. However, Donovan [1986] concluded that the Dalai Lama's statement was not an actual state of affairs but a plea for religions to make a common cause, interpreting, and adjusting their traditions and beliefs so as to be able to affirm such common concerns as moral.

RELIGIOUS AND PHILOSOPHICAL ETHICS

The challenges of dealing with a wide variety of cultures can be better understood by examining the ethics of the major religions/philosophies of Christianity, Judaism, Islam, Confucianism, Buddhism, and Hinduism. Unfortunately, not all of these great religions are equally known by Westerners. Below are some of the critical issues in business ethics.

Business Ethics of Christianity

Christ expected his followers to integrate love into their lives by practicing values of compassion, generosity, forgiveness, graciousness (friendliness) and justice not only to friends but also to enemies [Perkins, 1995]. Jesus set a high standard, nothing less than the compassion of God [Savage & Lutz, 1995]. Fullness of discipleship means the imitation of the God known in Jesus. In the Sermon on the Mount, Jesus taught poverty of the heart, true detachment from earthly things, meekness and patience when opposed or even persecuted. The Golden Rule, stewardship, servant leadership, dignity of the human person, fidelity, honesty, humility, justice for the needy, and the "option for the poor" are just a few of the many concepts that come from Scripture that could be expected to influence ethical behavior in the business setting. Christians are called to show love for God and neighbors in all of life; there can be no religiously neutral area of life and all economic actions are influenced by the person's faith [Monsma, 1995].

Although concern for ethical business behavior in Christianity dates back to the Biblical days of Sirach [1986] who contended that "between buying and selling there is sin...a merchant can hardly remain upright, nor a shopkeeper free from sin; For the sake of profit many sin, and the struggle for wealth blinds the eyes," business ethics was first acknowledged in the 16th century. According to Christian theology prior to the 16th century, the pursuit of wealth was considered not moral. Medieval theologians were considered dominant contributors to the economic debate, because every dimension of life was subordinated to the divine plan as it was presented by the church [Williams, 1982]. Economic activities that did not fulfill the needs of the person or the institution involved, especially usury and avarice, were condemned by the authorities because they diverted a person's consciousness from God. Rossouw [1994] suggested that this mindset subordinated economic activities to the divine order.

The Enlightenment at the beginning of the last century severed this connection. "The legitimacy of the state and all other social structures was reformulated on so-called nonreligious grounds or principles to which all rational thinking individuals could subscribe" [Rossouw, 1994]. Many theologians proposed that a timeless theology does not interfere with messy temporal matters and a religion privatized to personal relations would not properly become involved in contemporary economics. For many in business, this approach resulted in a compartmentalization of their personal faith and their active work life. Schlender [1982] contends that many business persons were (and continue to be) forced to live a schizophrenic life with one understanding of reality in the workplace, and an altogether different understanding of morality in the church. This may lead Christian business persons to ignore the teachings of Christ in their workplaces and do whatever it takes to succeed.

Counter to this shift was the Calvinist perspective on economic activity which suggests that economic success was a good indicator of divine approval. This led to a Protestant work ethic, which for many, imposed a workalcoholism glorification of work for its own sake [Camenisch & McCann, 1990]. Vogel [1993] suggests that the U.S. has the highest standards of business ethics in the world, because it is only country where a majority of the population has belonged to dissenting Protestant sects. Protestantism with its assumption that the individual can and should do "God's work" by creating wealth, raises the public's expectations of the moral behavior of managers.

Because the moral status of capitalism in Europe tends to be problematic, Vogel [1993] contends that there is much more cynicism about business ethics in Europe and even in Japan. Europeans, especially Catholics, have tended to view the pursuit of profit and wealth with suspicion. This may make them less surprised when managers and companies are found to be "greedy." European businesses appear to place greater expectation on informal mechanisms of social control within the firm instead of the corporate codes of conduct preference of Americans.

Ethics in Judaism

Although Walton [1990] suggests that the following ethical traditions do not mean much to many Jews, he list certain salient points for their relevance to business:

1) A mutual obligation for a moral society.
2) Emphasis by Moses on the organic relationship between individual and community.
3) The doctrine of individual responsibility for social righteousness.
4) The importance of character that is tested by "suffering in a furnace of affliction."
5) An obligation to help and protect the poor and unfortunate.
6) A sense of humility.

Tucker [1990] in Walton's book, *Enriching Business Ethics*, contends that Jewish tradition expects that business must proceed, as much as possible, within an atmosphere of trust, fairness, and justice. There should be such implicit trust among all actors in the marketplace that one would not even mislead another person through silence, by failing to articulate one's true intentions. Like Christianity, the Ten Commandments are critical guidelines for individual behavior. Also in the Jewish *Book of Tobit* we find the Golden Rule as expressed by, "Do to no man that which you hate" [Frost, 1992].

Ethics of Islam

Islam is one of the world's largest religions with almost 500 million followers. Parts of the Koran resemble the Bible, the Apocrypha, and the Talmud. It also contain many stories about the prophets that appear in the Old Testament and the New Testament, including Jesus Christ, whom it calls the *Word of God*.

The Koran, like the Bible and its Ten Commandments, forbids lying, stealing, adultery, and murder and focus on the pragmatic aspects of life while asserting humanistic and spiritual needs. Although the Koran, around which the whole of Muslim moral, religious and social life revolves, contains no ethical theories, it embodies the whole of the Islamic ethos [Fakhry, 1994]. Historically, most Muslims made no clear distinction between ethics and law because many regarded the Koran as a legal document with specific rules and regulations. Later, philosophical theories of ethics were developed that reflected the influence of the diverse Greek philosophical schools and even Hindu mysticism. Buch, [1990] also found relevance to Hindu theology in that the God of Islam is a personal God that corresponds to Ishwara of the Hindus.

The creed of Islam emanating from the Koran may be summed up in the formula: 'Believe and do right' (Buch, 1990). The Koran (Qur›ân) "regards the conduct of man, individually and collectively, in private and in public, as being under divine command" [Hovannisian, 1985]. If man's fundamental character is his religiosity, it cannot long coexist with shabby conduct [Buch, 1990]. One's fundamental convictions make up his character, his self, because Islam truly means resignation or surrender to the will of Allah. The same rules apply to business as to other financial transactions. Usury and the taking and giving of interest was considered a crime. An inordinate pursuit of wealth, any worldly object, and an excessive indulgence in physical pleasures was also rejected [Buch, 1990].

In dealing with others, truthfulness and sincerity are highly valued, but hypocrisy is not. Honesty and fairness in all business transactions is strictly prescribed with warnings to anyone who would defraud others (Buch, 1990). Fidelity to promises is crucial, because every Muslim's work must be his bond (Buch, 1990). Payment of debts is incumbent upon all believers. Any type of misappropriation of property is condemned. All business should be conducted openly to secure legitimate profits, but monopolies are a sin. Theft and robbery will be severely punished, but competent and accepted authority are to be respected. Codes of ethics and moral standards in corporations should be applicable to everyone [Ali, 1998].

The Islamic philosopher Ghazali suggest that the Golden Rule is expressed by "To treat one's brother as one wants to be treated is the most fundamental level of brotherhood" [Wattles, 1987] and illustrated by specific values. Fairness and kindness toward others are expected--even infidels not at war with you. Courtesy and respect for human dignity are essential qualities of a good Muslim. Buch [1990] indicates that Islam is above all a gospel for the poor -- especially supporting orphans, supplying the needy, ransoming the captive, or harbouring the travelers. God loves the doer of charity and just actions and a Muslim is expected to give 2 1/2 percent of his wealth each year as a trust fund for the needy.

Recent empirical work by Ali [1992] suggests that pure Islamic teaching place emphasis on human dignity, loyalty, and hard work. Public adherence to specific norms and principles is sanctioned in some Arab countries, but not in all.

Ethics of Hinduism

As the oldest living religion in the world, the philosophy and literature of Hinduism have influenced people throughout the world, but especially in India. A conceptual revolution developed in India from the sixth through the fourth centuries B.C. that coincides with the worldwide revolution in philosophy in Greece with Socrates, Plato, and Aristotle; in China with Confucius, Lao Tzu, and Chuang Tzu. Hinduism claims to represent man's perennial quest for truth in its ultimate and absolute form [Balbir, 1991]. Unlike most major religions, Hinduism was not founded on the teachings of one man or a single book like the Bible, but gradually developed over thousands of years and many cultures.

Hindu ethics is a moral system which acknowledges and provides guidance to solving genuine moral dilemmas in its scriptures. However, most of the dilemmas dealt with the problems of suffering in oneself and others and not of business [Herman, 1991]. Spiritual growth and learning have to be founded in the discovery of self within the cycle of birth and death (*samsára*). Life's goal is to end desire-filled action (*karma*) that leads to bondage and rebirth that is accomplished by insight into the true Self and or/devotion to a personal Lord [Forth & Mumme, 1996]. Realizing this spiritual Self through work entails both success and failure in the objective plane.

Through reason and intuition, Hinduism finds the source of ethics in the nature of the human being. It affirms universal values empirically grounded in human nature, but at the same time it is sensitive to the individual and the particular [Crawford, 1995]. All Hindu systems consider the direct aim of ethical conduct is the giving up of all the limitations of not-self. The realization of oneself as immortal constitutes the highest good for the individual and this "conscious willing" is the basic principle of Hindu ethics [Balbir, 1991]. Hindu ethics also subscribes to cardinal virtues such as truth telling, charity, non-violence, and restraint, but it also considers particular circumstances [Balbir, 1991].

Ethics of Buddhism

One of the dominant Asian religions for almost 200 million followers is Buddhism. Buddhism developed about 500 B. C. from the teaching of Siddhartha Gautama, a Hindu Brahman, who left his luxury and family to seek religious enlightenment that would free him from life's sufferings. This he called nirvana and could be gained only by freeing oneself of all desires and worldly things. Though the Buddha is remembered as a great teacher of the doctrine of no-self, he wants us to know who we are and have been, and so change our way of thinking [Clooney, 1998].

Buddhist values with regard to wealth and economic activity are often slighted in Western scholarly studies even though they play a significant role as a part of overall Buddhist philosophy [Ornatowski, 1996]. Both the Theravaada and Mahaayaana schools value compassion (*karu.naa*) by emphasizing the sharing of wealth with others. The Buddhist morality is a virtue-oriented, character-based, community-focused ethics, similar to the Western ethics of virtue tradition (Whitehill, 1994). Buddhists believe that meritorious acts in the present life will result in rewards in future lives. This "karma" can be conceived of as a Buddhist basis for justice in that each individual received what he or she deserved in life based upon past actions [Ornatowski, (1996]. The Buddhist Dammapada teaches, "To all is life dear. Judge then by thyself, and forbear to slay or to cause slaughter."

The five great commandments of Buddhism are similar to the Ten Commandments of the Old Testament: 1. Do not take life; 2. Do not steal; 3. Do not commit adultery; 4. Do not tell untruths; 5. Refrain from intoxicants. Cooper & Cooper [1996] contend that most Buddhists know these commandments, but break most or all of them almost every day.

Ethics of Confucianism

For more than 2400 years the peoples of China, Korea, and Japan have lived in societies profoundly influenced by the thought and ideas of Confucius (551-499 B.C.). He taught benevolence toward fellow human beings, moral behavior and sound family responsibility in his system of practical ethics. Clarke contends that his basic philosophy comprised the highest ethical value of other religious systems -- even though most do not consider Confucianism to be a religion [Clark, 1993]. This philosophy spread to become the most important single force in Chinese life. It influenced Chinese education, government, and attitudes toward correct personal behavior (ethics) and the individual's duty to society. Dollinger [1988] suggests that this Confucian emphasis on the family has been redirected to the firm in countries like Japan.

Confucian thought conceives a gradual development of the ontological quality of Man. This makes 'cultivation' necessary for the fulfillment of human nature (*jen*). "The cultivation and development of *jen* as an inner quality is only possible through the continuous practice of *li* (propriety)" [Ro, 1986]. The focus of *li*, according to Lai (1995), is on the value of human action and on whether one has acted appropriately in a situation given the nature of the relationship. Thus, *li* involves a sense of moral appropriateness in evaluating human action and centers on human relationships, but it does allow individual initiative and input into one's interpretation of what might be appropriate in particular situations. *Li* appears to be the conventionally accepted style of actions or cultural lifestyle that comes from a variety of sources, including one's personal virtue, a communally shared knowledge, and established values [Ro, 1986]. Lai suggests that these established standards have evolved from the ethical and aesthetic insights of those who have experienced similar situations in the past.

Life is considered interdependent or reciprocal in relationships as illustrated by *shu,* which is in short, the "golden rule": Do not do to others what you do not wish to be done to yourself. Further, the Chinese translation of the word ethics, "dao de" means the "path of virtue." The search for virtues such as courtesy, friendliness, generosity, unselfishness, loyalty, empathy, working hard, persistence, eagerness to learn, and maintaining control of one's behaviors is reflected in Hofstede and Bond's [1988] scale of Confucian Work Dynamism. It also emphasizes a social hierarchy based on stability in society, a respect for tradition and a strong desire to save "face" that refers to one's dignity, prestige, and self-respect. The self is at once moral, social, political, and intellectual and cannot be compartmentalized. Confucian thought conceives a gradual development or spiritual journey. A life well-lived is a life of unceasing progress toward perfect virtue [Savage & Lutz, 1995].

RECOMMENDATIONS FOR TEACHING CORE VALUES

Donaldson and Werhane [1999] contend there a set of core human values which are common around the world in the various religions: 1) Respect for human dignity, 2) respect for basic rights, and 3) good citizenship. Analysis of the above information suggests that truthfulness, justice, and concern for the poor could be added to these core values. In addition to those values listed above, many values are common among all of the religions mentioned: dignity, forgiveness, generosity, honest, justice, stewardship, and truthfulness.

Teaching the ethics and values common to most major religions, involves four steps. The first step is student discovery of intrinsic values. The second step is discovery of these values through the holy books of the world's major religions. The third step is a modern day story of the value as related in some way to the parables and stories of the holy books. The fourth step is a student written short story which is discussed by their peers.

Students would begin the process of learning an ethical framework by discussing values they possess or have learned that are essential to their being. The class should have a consensus on the values each member of society should possess. Once the class has discussed, or in some cases argued, for their intrinsic values then the students will feel more ownership of these values. Many of the skills necessary to become successful in today's workplace are developed during these exercises. Students must develop a framework for emotional competence as well as intellectual competence. (Goleman) From a teaching perspective, the students develop several skills during this process. They learn self-awareness, a recognition of their preferences and values. They appreciate self-regulation, keeping their emotions from overtaking the discussion, develop trustworthiness and become more comfortable with new ideas and information and appreciate a perspective different from their own. Students also learn to manage their relationships with their peers by being empathetic, acknowledge conflict and conflict resolution, and nurture collaboration and cooperation with other students. The key is for the teacher to guide the discussion and not pontificate on what is the "correct" ethical value; the students must develop their own ethical framework in order for them to fully accept the values.

Once the class has accepted and adopted these values as essential, then the students need to look for applications of these values as they are applied in the holy books of the world's major religions. Numerous parables, short stories, or sayings of wisdom can be found in the Holy Bible, the Torah, and the Koran.

For instance, in looking at the Jerusalem Bible there is the parable of the prodigal son.

> A man had two sons. The younger said to his father, 'Father, let me have the share of the estate that would come to me.' So the father divided the property between them. A few days later, the younger son got together everything he had and left for a distant country

> where he squandered his money on a life of debauchery.
>
> When he had spent it all, that country experienced a severe famine, and now he began to feel the pinch, so he hired himself out to one of the local inhabitants who put him on his farm to feed the pigs. And he would willingly have filled his belly with the husks the pigs were eating but no one offered him anything. Then he came to his senses and said, 'How many of my father's paid servants have more food than they want, and here am I dying of hunger! I will leave this place and go to my father and say: Father, I have sinned against heaven and against you; I no longer deserve to be called your son; treat me as one of your paid servants.' So he left the place and went back to his father.
>
> While he was still a long way off, his father saw him and was moved with pity. He ran to the boy, clasped him in his arms and kissed him tenderly. Then his son said, 'Father, I have sinned against heaven and against you. I no longer deserve to be called you son.' But the father said to his servants, 'Quick! Bring out the best robe and put it on him; put a ring on his finger and sandals on his feet. Bring the calf we have been fattening, and kill it; we are going to have a feast, a celebration, because this son of mine was dead and has come back to life; he was lost and is found.' And they began to celebrate.
>
> Now the elder son was out in the fields, and on his way back, as he drew near the house, he could hear music and dancing. Calling one of the servants he asked what it was all about. 'Your brother has come,' replied the servant, 'and your father has killed the calf we had fattened because he has got him back safe and sound.' He was angry then and refused to go in, and his father came out to plead with him; but he answered his father, 'Look, al these years I have slaved for you and never once disobeyed your orders, yet you never offered me so much as a kid for me to celebrate with my friends. But, for this son of yours, when he comes back after swallowing up your property - he and his women - you kill the calf we had been fattening.'
>
> 'The father said, 'My son, you are with me always and all I have is yours. But it was only right we should celebrate and rejoice, because your brother here was dead and has come to life; he was lost and is found. (Luke)

There are many values one could associate with this parable: forgiveness by the father to the younger son, generosity by the father for dividing his estate between his two sons, stewardship by the older son who took care of his father's estate, dignity which the father bestowed on his younger son upon his return. Looking at both the story and the values exhibited, one could develop a modern day parable. Here, for example, is a story related to the older son, the caretaker of his father's estate:

> A woman began working in a factory. She worked there for three years and in that time she was a dependable, conscientious, hard working individual. She was a valued employee. The company provided her with training and promoted to supervisor. Over the years she contributed to the profits of the company; she found ways to cut costs on the production line and make more efficient use of the production workers during "down times." She was eventually promoted into middle management of the company, where she continued to be a valued member of the company. When she had her first baby, she wanted to spend as much time with the child as possible and took a company sponsored maternity leave. She enjoyed staying at home and wished there was some way that she could both work and be with her newborn son. Her employer however told her that was not possible; as part of management she should give all of her attention to the job when she is at work. Therefore, she must choose either to come back to work or leave the employment of the company. Does the company have any moral obligation to the woman, a valued employee?

Once the class has discussed this simple short story, some may argue the company has no obligation to this woman whatsoever. Others may argue that the company has invested in this woman for many years and the company would be wasting their money by not making some accommodations for her. There are similar values exhibited in both the original and modern day parable. The woman has certainly been a good steward of the company's assets while working for them. The company has been generous with her, providing her training and monetary benefits.

The last, and most valuable part of the concept would be for the students to write their own modern day, short case, utilizing both the values and ideas of the original parable, and relate these two stories in the popular business press that illustrate ethical problems. Once the students have written and discussed their own cases, or utilized role playing the students can see the need to incorporate essential values into their personal and professional lives. By writing their cases, the students will develop an appreciation for the difficulty of looking at all sides of the issue and assessing the worthiness of the values.

The success of these exercises comes when students appreciate the difficult of dealing with ethical conflicts, yet at the same time can recognize they have developed a framework for their own personal success in resolving these ethical issues.

CONCLUSION

Using the approach suggested above will integrate ethics across the curriculum and bring current global ethical dilemmas into the forefront of current thought. Since the current media is filed with all types of ethical situations and their repercussions, students and faculty alike will enhance their recognition of these ethical issues and will have an established basis of religious values from which to draw to resolve these conflicts.

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TOWARDS GLOBALIZATION OF THE CHINESE STOCK EXCHANGES

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Abstract

The purpose of this paper is to examine how the new Securities Law and the new Regulation for B share market make the Chinese stock exchanges more global. Since performance of the Shanghai Stock Exchange was assessed in Xiao and Kelvin (1998), illustrations in this paper are restricted to the Shenzhen Stock Exchange. The focus is on shares B for foreign investors. Analytical method is based on the theories of generic strategy, globalization, contestability, and personal working experience of Feng Xiao in the Chinese financial sector. Publication of the Securities Law is encouraging. This was the first suggested step in Xiao's blueprint. It appears that success of Chinese stock exchanges depends on currency convertibility and remittance of funds abroad.

INTRODUCTION

The goal of this paper is to assess the new Securities Law and the new Regulation for the B share market with a view to making the Chinese stock market more global. The Shanghai Stock Exchange was studied by Xiao and Kelvin (1998). Therefore illustrations in this article are limited to B shares in Shenzhen because they are designed for foreign investors. Three main functions are given to the stock market: market mechanism, efficiency in allocation of financial resources, and a dynamic, fair and competitive environment for enterprises. Stock exchanges provide information transparency and increase acceptability of companies for foreign investors. Liberalization would presumably multiply joint ventures and upgrade corporate management and efficiency in China. Profound transformation of the state-owned enterprises (SOEs) is part and parcel of the economic reform (Chan and Kelvin 1999). The overall reform includes integration of China into the world economy, policies to maintain employment and balance of payments in equilibrium, a more convertible currency, a modernized banking sector, a better blend in the private and public provision of goods and services (Chan and Kelvin 1998), promotion of foreign direct investment, and improved taxation. Bridging the gaps between the International and Chinese accounting standards is an interesting separate topic for further research.

In 1994 important reforms were implemented in finance, accounting, investment, and international finance (Chen 1994). Table One provides statistics for A and B shares. A shares are traded in national currency (RMB), they are restricted to the Chinese citizens. B shares are restricted to foreign investors, they are traded in US dollars and HK dollars.

TABLE 1 - A SHARES AND B SHARES.

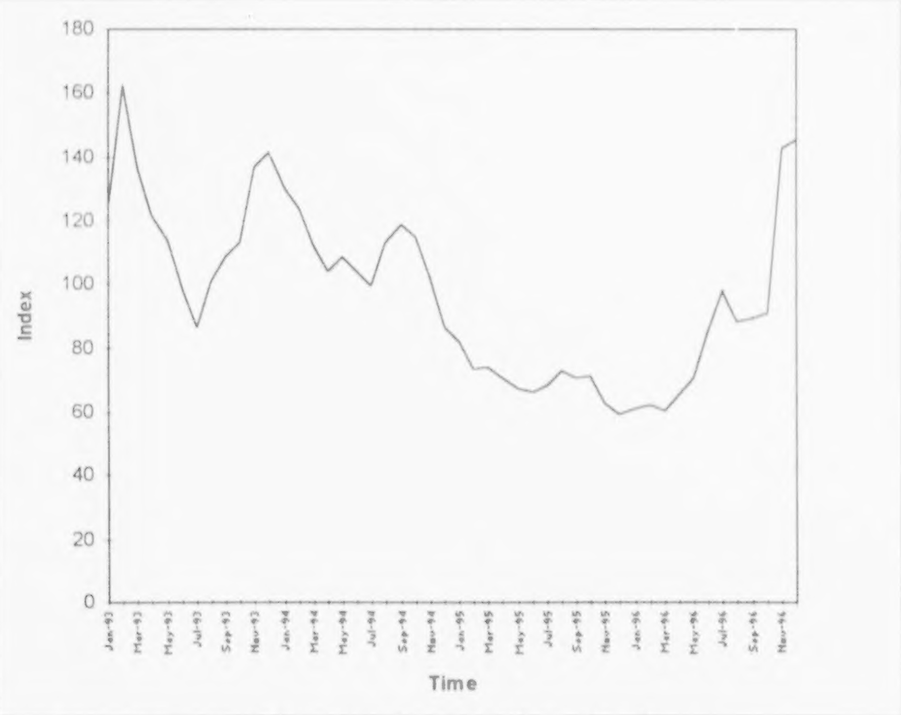
	Type of Shares	1994	1995	1996	1997
Total Turnover (Billions of RMB)	A Share	812.8	395.2	2,105.2	773.9
	B Share	12.4	7.7	28.0	58
Number of Stocks	A Share	287	311	514	648
	B Share	58	70	85	18.1
Closing Indices of the year	Shanghai Composite	647.87	555.74	917.02	1194.1
	Shenzhen Composite	140.63	113.74	341.93	381.29
	Shanghai B Share	62.80	47.69	67.03	55.88
	Shenzhen B Share	86.66	59.48	145.50	98.97

Source: Xiao F & Kelvin A 1998Strategic Blueprint to Develop Chinese Stock Market. China Inter-national Business Symposium 27-29 May Proceedings, Shanghai, pp.282-283.

The Gross Domestic Product is expected to double by 2010. Such rapid growth boosts the investors' expectations. But risks and political uncertainty appear high. Liberalization of trade and convertibility of the Chinese currency (RMB) are pursued by the government.

Figure One show the evolution of B shares index in Shenzhen.

FIGURE 1 - SHENZHEN B SHARES INDEX (FROM 01/93 TO 12/96)



Source: Authors' estimates based on statistics from Datastream.

THEORETICAL METHOD

The method is based on the theories of globalization, contestability, strategic networks, generic strategies, and personal working experience of Feng Xiao in the Chinese financial sector. The main principle of globalization (Dunning 1995) suggests that China should be integrated into the world economy by reducing tariffs to flows of goods and services, and barriers to capital flows. Degree of currency convertibility is important for attracting foreign investors. Fluctuations in exchange rates result in transaction and translation exposure, and ways have to be devised to remit funds. The important assumption is made that opening up the economy to international competition would improve management and performance of all Chinese enterprises, including those owned by the state.

The theory of contestability helps to determine cost functions, and market structures (Baumol et al 1986). It provides guidance for reduced government intervention (Kelvin 1996), lower entry and exit barriers (Briand & Kelvin 1997), phasing out listing quotas by the stock exchanges, and merging markets for A and B shares. The aim of deregulation is to leave the market to find the configuration of services and prices, by removing controls (Bailey et al 1982). Several objectives can be pursued such as determining the numbers of listed companies, optimal market structure, and equilibrium prices of shares; replicating contestability when it is insufficient (Vickers et al 1985 & 1989); assessing the impact of globalization on industries and services; establishing guidelines for regulation (Briand & Kelvin 1998a). The following working assumptions are made: (1) contestable conditions can be created; (2) barriers to entry and exit can be minimized and all qualified companies could have access to B share market; (3) excessive controls can be ended, resulting in better allocation of resources (Posner 1975); (4) contestability and globalization create opportunities for innovations and dynamic efficiency (Briand & Kelvin 1998b).

Porter's (1986) generic corporate strategies involve cost leadership, differentiation, and focus. Cost leadership and quality of service are assumed to be achieved by improved internal management. This can be enhanced by higher international contestability and improved links between performance and value to the stakeholders. Differentiation involves the development of product or service that is perceived as unique. The focusing of effort allows the firms to provide better service or better product more efficiently.

Due to administrative barriers in the financial markets, beneficiaries' and investors' wants cannot effectively guide the allocation of resources. This results in poor quality of services. The institutional and motivational constraints hinder the diffusion of benefits from investments (Kelvin 1997a). Contestable pressures are considered effective when the stock market requires little intervention and is sustainable. The framework of strategic networks is complementary to contestability in finding new and efficient market configurations (Kelvin 1997b). The focus is on positioning the firms so that highest value for the stakeholders can be achieved (Webster 1992). The partner selection includes agreement on goals and strategies, complementary sets of resources and skills.

SHENZHEN STOCK EXCHANGE ASSESSED

In 1994 and 1995 return on B shares in Shenzhen appears negative (Table Two).

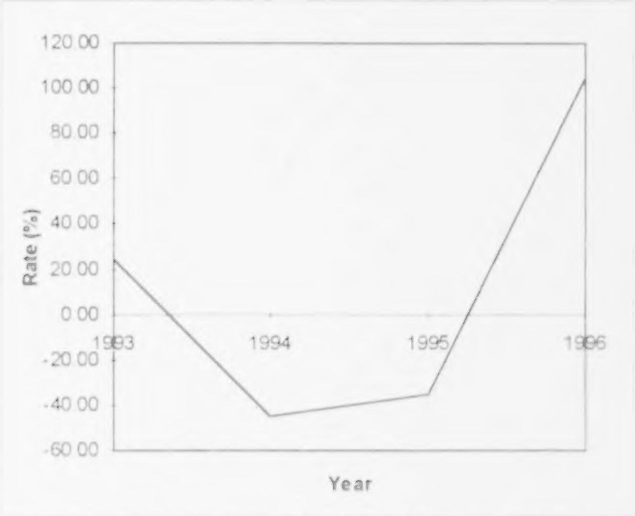
TABLE 2 - ANNUAL RATE OF RETURN, RISK AND CORRELATIONS OF SHENZHEN B SHARES

Year	Return (%)	Risk (%)	Correlation with Dow Jones
1993	24.20	15.63	0.13
1994	-44.57	7.89	0.24
1995	-35.40	5.38	-0.64
1996	105.19	16.91	0.44
Average	**12.36**	**11.45**	**0.04**

Source: Authors' estimates based on statistics from Datastream.

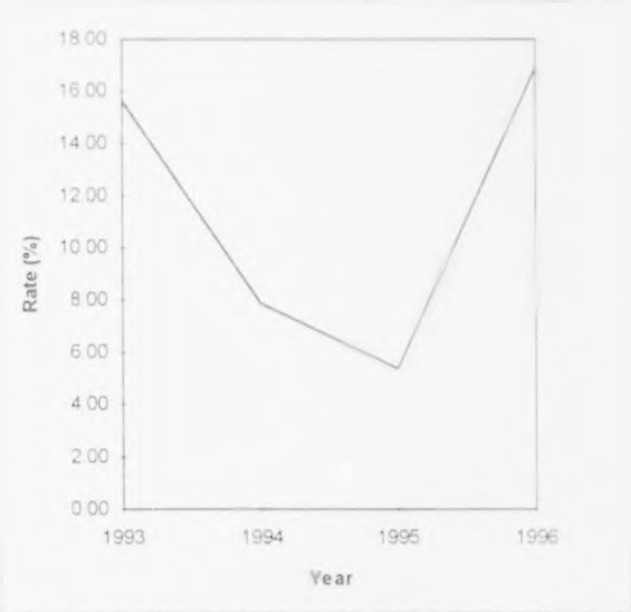
Over four years 1993-1996 the average annual rate of return in Shenzhen was 12.36%. This is better than in Shanghai where the average return over the same period was only 2.03%. However, the risk premium of 11.45% is high and very similar to that in Shanghai (Figures Three).

FIGURE 3a - ANNUAL RATE OF RETURN OF SHENZHEN B SHARES



Source: Authors' estimates based on statistics from Datastream.

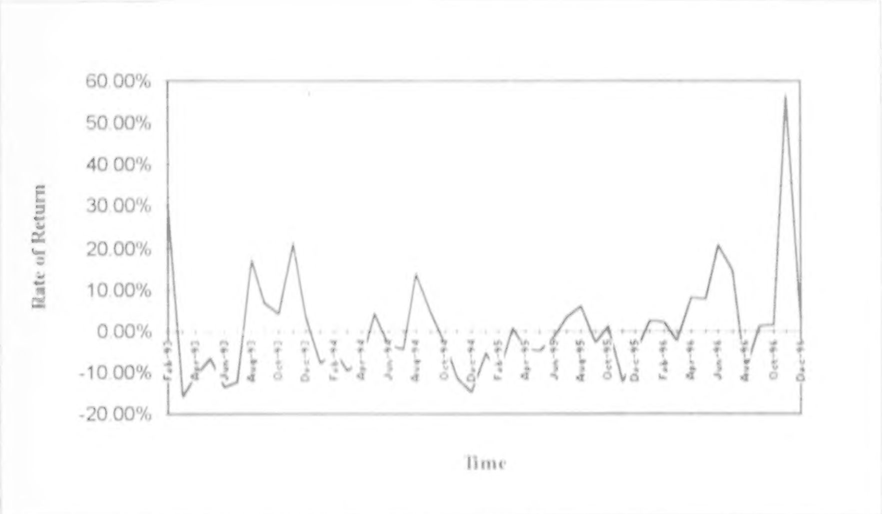
FIGURE 3b - RISK OF SHENZHEN B SHARES



Source: Authors' estimates based on statistics from Datastream.

The correlation with the New York stock market was lower than in Shanghai where the correlation coefficient was equal to 0.14. In Shanghai the market is dominated by the local institutional investors. In Shenzhen most stockholders are long-term investors from Hong Kong. Therefore, the Shenzhen stock exchange displays more sensitivity to changes in government policy (Figure Four).

FIGURE 4 - VOLATILITY OF SHENZHEN B SHARES' RETURN



Source: Authors' estimates based on statistics from Datastream.

The international investors remain hesitant due to uncertainties, instability and high risk. The austerity policy largely restricted available funds for the Chinese enterprises. The tighter credit resulted in rising corporate debts. About 70% of the listed companies increased their Account Receivables in 1995. Over 40% of the companies had Account Receivables surpassing 15% of their total assets. Moreover, managers are not quick to respond to change. They are not familiar with modern management techniques and theories.

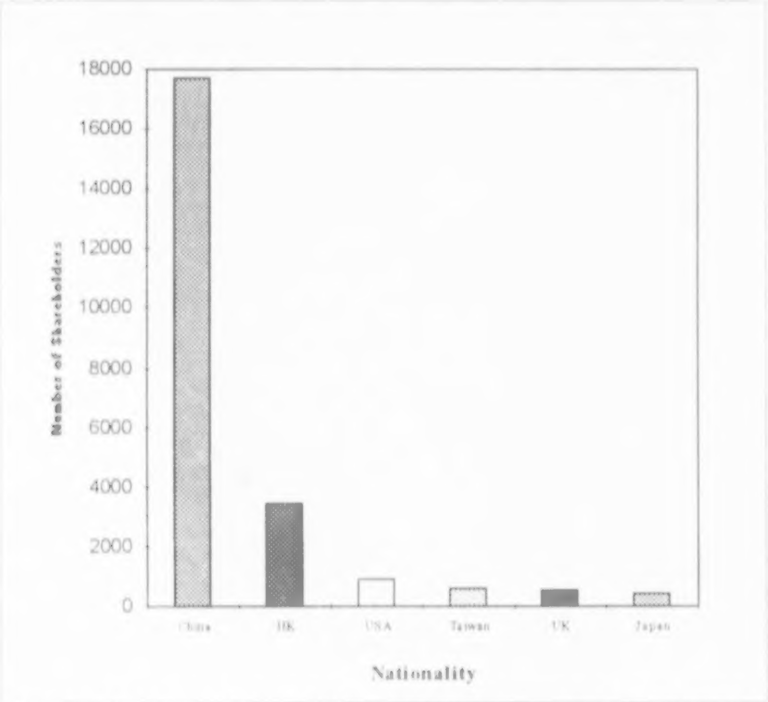
Figure Five shows the distribution of shareholders by nationality. The overseas ethnic Chinese shareholders form the overwhelming majority. The Hong Kong investors are in the second place. They are more numerous than the shareholders of the USA, Taiwan, UK and Japan taken together. (See Figure 5)

The B shares are predominantly held by large institutions and firms who are interested in long-term investment. Therefore trading in the secondary market is thin. Even if the price is right, the investor can lose on commissions because smaller trading is more expensive. The regulators set a quota system for listing candidates from every province on both stock exchanges. A separate study could be made on the quota system and its implications.

COMPARATIVE ACCOUNTING REGULATIONS

Although China introduced new Accounting Regulations for Foreign Investment Enterprises (ARFIE) in 1992, there are still considerable deviations from the International Accounting Standards (IAS). For example, the IAS require the disclosure of accounting policies. The ARFIE do not go that far; policies should be consistent and changes in accounting methods should be reported. Long-term investment and contingencies are not specified under the ARFIE. Table Three shows some differences in accounting practices. Although overseas analysts have been trying to convert the accounting documents into international standards, the disparities discourage international investors.

FIGURE 5
DISTRIBUTION OF B SHARES' SHAREHOLDERS BY NATIONALITY AT THE END OF 1996.



Source: Shenzhen Securities Clearing and Registration Corporation.

TABLE 3 - COMPARISON OF ACCOUNTING STANDARDS

Accounting Issue	International Accounting Standards	Standards Under the Accounting Regulations for Foreign Investment Enterprises
Receivables	Provision for bad and doubtful debts is required when justified.	Provision is required within 3% of the end year balance. Write-off of bad debts is permitted.
Inventories	Lower cost or net realizable value; first-in, first-out; weighted average; last-in, first-out methods. Provision for damaged, slow, and obsolete goods is required.	Inventories are valued at cost. First-in, first-out; last-in, first-out; weighted average; and moving average methods. Provision is allowed, subject to approval. Shortage, obsolescence, or damages are reflected in the annual profit and loss account.
Property, Plant, and Equipment	Asset valuation is at historical or updated cost. Provision for loss in the fixed assets value is required.	Assets should normally be valued at historical cost.
Depreciation	Depreciation is calculated on the basis of historical cost, useful life & residual value. The straight-line and	Standards are similar to IAS, but estimated residual value is generally not less than 10% of original cost. Methods include straight-line and production-output. Accelerated

	accelerated methods are adopted.	depreciation may be used subject to approval.
Intangible Assets: Pre-operating Expenses	Set-up costs are charged to the income statement. Deferral is only allowed if commercial viability is reasonably assured.	Pre-operating expenses are amortized in equal installments over a period of not less than five years upon commencement of operation.

Accounting Issue	International Accounting Standards	Standards Under the Accounting Regulations for Foreign Investment Enterprises
Shareholders' Equity Shareholders'	Share capital in foreign currency is translated at the exchange rate ruling on the date of the contribution.	Share capital in foreign currency is recorded at the official rate. Contributions in installments are recorded at the official rate for the first installment. Exchange differences are recorded in the capital reserve account.
Research and Development Expenses	Research expenditures are charged as expenses. Development costs are deferred if likely to be recovered from future operations.	Deferral of research and development costs is not specified. Such costs are usually charged once incurred.
Foreign Currency Translation	Translation is at the date of the transaction. Monetary assets and liabilities are translated at the balance sheet date. Exchange gains or losses are charged to operating results.	Translation is at the transaction date or first date of the month. Exchange gains or losses are charged to operating results. Exchange gains arising during pre-operating period may be written off over five years after the commencement of operations, retained for setting off future operating losses, or carried forward until liquidation.
Account for Leases	Assets under a finance lease are capitalized at the fair value of the assets. Lease rentals are split between interest and capital. Lease rentals are charged to the profit and loss statement.	Assets under a finance lease should be capitalized at the value specified in the lease agreement. Otherwise, standards are similar to IAS. No guidance is provided on the accounting for finance charges or operating lease rentals.

Source: based on "People's Republic of China" by Deloitte Touche Tohmatsu International, 1995 Edition.

STEPS TOWARDS GLOBALIZATION FOR THE CHINESE STOCK MARKET.

The annual turnover of the Chinese stock market is still many times below the daily volume of international capital flows. Therefore, the globalization of the Chinese stock market should be proceeding step-by-step.

The Securities Law

The new Chinese Securities Law becomes operational on July 1, 1999. It aims at protecting the investors' interests, and reducing the risks. It encourages healthy development of the mature stock market. It covers the development of the primary market, registration service and monitoring of the securities, information disclosure, the secondary market operations and trading restrictions, mergers/takeovers of the listed companies, and watch dogs' responsibilities for monitoring compliance with the law.

The Regulation for the B Share Market

The new Regulation for B share issues by the companies was announced on June 2, 1999 by the Chinese Securities Monitoring Committee. Its purpose is to the boost the B share market by improving the performance of stock exchanges, and by easing access for more domestic companies. In 1998 there were 107 companies whose B shares were traded at the Shanghai and Shenzhen stock markets in USD or HK$. In addition to foreign companies, the Chinese companies are allowed to get access to the B share market such as state-owned enterprises, collective companies, private companies, and other types of companies. The quota system has been cancelled. The new measures are assumed to reduce the waiting lists for candidate companies.

Upgrading the Internal Management of the Chinese Enterprises

As the Chinese government has reduced overall import tariffs and consolidated various tax regulations, all the Chinese enterprises are assumed to upgrade efficiency to become more competitive. In 1996 China started to reduce import tariffs on about 4,000 items by 30% or better and phase out more than 170 quotas on imports (Xiao and Kelvin 1998). These measures have a dampening effect on the prices.

About 70% of the companies with B shares are in manufacturing. Protection of certain industrial sectors is being phased out. Under the increasing competition, differentiation is intensifying. Some enterprises improve management and efficiency. Their shares become attractive for foreign investors. On the other hand, funds have to be provided to smooth out mergers, acquisitions and closures of less successful enterprises.

Merging the Markets of A and B Shares and Currency Convertibility

A and B share categories make a clear distinction between the yuan-denominated market for the Chinese investors, and for the hard currency-denominated market for foreign investors. In 1997 B shares were traded at about 66% of A share price level in Shanghai and they were traded at approximately 48% of A share price level in Shenzhen. Therefore, the appreciation potential for B shares is substantial if both markets for A and B are merged, with a limit on foreign participation.

However it remains unclear how such proposed merging of A and B share markets can be brought closer by the new law and the new regulation. The obstacle is in the inconvertibility of the Chinese currency. Return on foreign investment in the Chinese shares remains low or negative. Risk is enhanced by fluctuations in exchange rates and restrictions to remit funds abroad. The new measures ease restrictions on the supply side. But how will this excess supply be matched on the demand side? When new B shares are issued, who will buy them? If the currency convertibility and remittance of funds are not improved is not improved, the prices for B shares on the secondary market could slide further down due to excessive supply.

Convertibility requires comprehensive price liberalization, which was initially scheduled between 1998 and 2000 (Lai 1997), but later it was delayed. Zhu (1997) further by facilitating more domestic companies to enter the market and improve the performance from London School of Economics formulated conditions for strong Chinese currency such as internationally competitive corporate sector, stable economic growth, low inflation, and effective stabilization mechanisms. If the RMB can become convertible in the future, the two-tire system of stock market will be abolished, the Chinese stock market will become global.

CONCLUSION

The first two important steps from Xiao's blueprint have been made towards globalization. The new Securities Law and the new Regulation for the B share market are encouraging in increasing legal protection of domestic and foreign investors. The listing quotas have been abolished. The access procedure to the B share market has been simplified and eased. Under contestable pressures of the global market, the national companies have to improve efficiency, management and quality of products and services. They have to become more customer-oriented. However the most far-reaching step of merging the markets for A and B shares depends on the currency convertibility.

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HISTORIAN: BUILDING A NEW NATION IN 1789

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Abstract

The case study Historian: Building a New Nation in 1789 contains the proprietary computer database CONGRESS. The database provides interactive access to demographic and voting data on the 95 men who attended the 1st United States Congress held in New York City, 1789-1791. The 1st Federal Congress implemented the Constitution of the United States and established the framework for a Federal Republic that has lasted 210 years, and CONGRESS allows users to test ideas and speculate on the problems of establishing that democracy. LISTS, TABLES, and CHARTS can be generated on-line and combined with the text and materials of Historian... to form a Computer-Based Case Study.

Historian: Building a New Nation in 1789 [Hetzner, 1996] and the database CONGRESS use Statistical Package for the Social Sciences, (SPSS) to explore the nature of the 1st Federal Congress by detailing the demographic profiles of the 95 congressmen who attended the 1st United States Congress, and examining their votes on seven bills critical to the survival of the Federal government formed by the newly ratified Constitution--establishing a department of foreign affairs, assuming the debts of the states, funding the national debt, founding a bank of the United States, imposing an exise tax, instituting an "open door" policy in the Senate, and selecting a location for the national capitol. The demographic information on the congressmen include ethnic backgrounds, states and districts represented, education levels, religious affiliations, fathers' occupations, and attitudes toward the Constitution and government. Essentially, the text and computer database form a Computer Assisted Case Study when combined with the facsimiles of historical documents, spoken word pieces, music and visuals that complete the package. Historian: Buiding a New Nation in 1789 and CONGRESS, together with NYC 1789 a database generated by a systematic sample taken from lists of people living in New York City in 1789, are used in a regularly-offered course at the State University College at Buffalo, "The Historian and the Computer".

Virtually all American historians and secondary social studies educators would agree that the goal of history education in the United States is to produce an informed citizenry whose members are active participants in the democratic process. These same experts would also argue that knowledge of the living Constitution is basic to producing the rational, involved citizens who are vital to the survival of democracy. Students in social studies and history classes spend 100's of hours in K-12 and college learning about the Revolutionary War, the Declaration of Independence, the Articles of Confederation, and the Constitution of the United States. Unfortunately, a great deal of this instruction is not internalized. Instruction tends to be oriented toward structure and function within a chronological format and is usually quite bland in presentation. The period in which the Constitution was adopted and implemented has been more or less "sanitized" for general consumption in public schools. Little attention is paid to the cultural, social, and political context in which the Constitution was ratified, and in which the members of the 1st United States Congress took office. Probably the only exception to this description of instruction regarding the Constitution is when the adoption of the Bill of Rights is studied and discussed. *Historian: Building a New Nation in 1789* and CONGRESS enrich the discussion by placing the 1st Congress within a 1789-1791 cultural, social and political context and providing a means by which participants can generate and test historical questions and hypotheses on-line using personal or networked computers.

The United States in 1789-1790 faced several problems that are still with the country in the 1990's--ethnic divisions, a large national debt, the potential for economic elitism, a move toward establishing term limits for elected officials, and the question of how to handle "special interests". Moreover, the early Republic had many of the problems that can be observed in the emerging democracies of the 1990's--ethnic divisions, economic problems caused by a dysfunctional infrastructure, and challenges to democracy by reactionary and radical elements. By 1789 and the assembly of the 1st United States Congress revolutionary fervor and euphoria over independence had diminished, serious questions were being asked about the economic and policy aspects of operationalizing democracy, and sectional divisions between large geographic areas of the United States were becoming apparent. The 1st Congress was faced with the task of using the newly-ratified Constitution to build a nation from 13 states, several of which had been printing and coining money, carrying on diplomatic relations with foreign nations, engaging in trade wars with neighboring states, entering into multistate contracts, threatening other states, maintaining standing armies, and experiencing internal dissention. The nation, under the Articles of Confederation, had reached a state where in the area around Wilkes-Barre, Pennsylvania, the Second Yankee-Pennamite War broke out in 1784 between Connecticut and Pennsylvania title holders, and in Massachusetts economic disputes between the more urbanized coastal areas and farmers in the western section of the state had erupted in Shay's Rebellion in 1786.

The 1st Congress was in session during a period in American history when the populace was highly politicized and fragmented. Political discussions were carried on by people in all walks of life on a daily basis, and face to face discussions between individuals and groups in open and closed forums were supplemented by articles and advertisements in the media and commissions to performers who performed publicly and privately. Politicians were skilled in the use of mass media provided by newspapers, tabloids, broadsides, and performers. Musicians, actors, pupeteers and mimes wrote and performed plays, mimes, music and poetry using political themes. Mainstream performing artists wrote paens to local and national figures and, as a sideline, created rhymes, jingles, parodies, ditties, limericks, and "one liners" that commented on federalism and the abilities or lack of talent shown by political leaders. Graphic artists produced historic oils, sketches and caricatures on the same men and themes. Examples of these materials and musical pieces from the period are integrated with the data of CONGRESS to produce the historical case study *Historian: Building a New Nation in 1789*.

New York City functioned as the capital of the United States between the years 1789-1791. In 1792 the government moved to Philadelphia and later to the new capital of Washington, District of Columbia. New York City in 1789 was quite primitive--essentially it was a "Third World" city compared to London, Paris or Stockholm. New York even suffered in "quality of life" comparisons with her more sophisticated and developed neighbor cities Boston and Philadelphia. For example, street numbers were assigned only in regard to sequence, odd and even street numbers appeared on both sides of the streets. The New York Directory, and Register, for the Year 1789 [Evans, 1941] listed the street numbers and occupations of city residents, and addresses of all members of Congress. Participants in the case study might start their study of the 1st Congress by asking the historical question "Where did congressmen live while they were in New York City?" With Congress, participants can use a LIST command to generate the names and addresses of Congressmen and then associate those addresses with a 1789 street map of New York.

LIST 1

NAME	ADDRESS	AGE	STATE
Fisher Ames	15 Great Dock St	31	MA
Abraham Baldwin	193 WATER ST	34	GA
Richard Bassett	15 WALL ST	44	DL
Egbert Benson	CNR KING & NASSAU STS	42	NY
Theodorick Bland	57 MAIDEN LANE	47	VA
Timothy Bloodworth	ADDRESS UNKNOWN	54	NC
Elias Boudinot	12 WALL STREET	49	NJ
Benjamin Bourn	ADDRESS UNKNOWN	35	RI
John Brown	19 MAIDEN LANE	31	VA
Aedanus Burke	MR HUCKS CNR SMITH & WALL STS	47	SC
Pierce Butler	37 GREAT DOCK ST	44	SC
Lambert Cadwalader	15 WALL ST	47	NJ
Charles Carroll	52 WALL ST	51	MD
Daniel Carroll	52 SMITH ST	58	MD
George Clymer	MR ANDERSONS AT PEARL ST	50	PA
Issac Coles	57 MAIDEN LANE	42	VA
Benjamin Contee	15 WALL ST	34	MD
Tristram Dalton	37 BROAD ST	55	MA
Philemon Dickinson	ADDRESS UNKNOWN	51	NJ
Oliver Ellsworth	193 WATER ST	44	CN
Jonathon Elmer	48 GREAT DOCK ST	43	NJ
William Few	90 WILLIAM ST	40	GA
Thomas Fitzsimons	MR ANDERSONS AT PEARL ST	48	PA
William Floyd	27 QUEEN ST	44	NY
Abiel Foster	ADDRESS UNKNOWN	54	NH
Theodore Foster	ADDRESS UNKNOWN	48	RI
George Gale	52 SMITH ST	33	MD
Elbridge Gerry	CNR BROAD WAY & THAMES WAY	44	MA
William B. Giles	ADDRESS UNKNOWN	27	VA
Nicholas Gilman	CNR SMITH & WALL STS	34	NH
Benjamin Goodhue	47 BROAD ST	40	MA
William Grayson	57 MAIDEN LANE	49	VA
Samuel Griffin	WHITE HOUSE NR HOSPITAL	43	VA
Jonathon Grout	47 BROAD ST	35	MA
James Gunn	34 BROAD WAY	36	GA
Thomas Hartley	19 MAIDEN LANE	40	PA
John Hathorn	MR STRONGS NR ALBANY PIER	40	NY
Benjamin Hawkins	ADDRESS UNKNOWN	35	NC
John Henry	27 QUEEN ST	39	MD
Daniel Hiester	19 MAIDEN LANE	41	PA
Daniel Huger	MR HUCKS CNR SMITH & WALL STS	47	SC
Benjamin Huntington	59 WATER ST	53	CN
Ralph Izard	BROAD WAY OPP FRENCH AMBASSADOR	47	SC
James Jackson	63 BROAD WAY	31	GA
William S. Johnson	AT THE COLLEGE	61	CN
Samuel Johnston	ADDRESS UNKNOWN	56	NC
Rufus King	ADDRESS UNKNOWN	34	NY
John Langdon	47 BROAD ST	47	NH

John Laurance	14 WALL ST	39	NY
Richard Bland Lee	15 WALL ST	27	VA
Richard Henry Lee	AT GREENWICH	57	VA
George Leonard	15 GREAT DOCK ST	59	MA
Samuel Livermore	37 BROAD ST	57	NH
William Maclay	MR VANDOLSOMS NR BEAR MARKET	51	PA
James Madison	19 MAIDEN LANE	38	VA
George Mathews	63 BROAD WAY	49	GA
James Monroe	ADDRESS UNKNOWN	37	VA
Andrew Moore	15 WALL ST	37	VA
Robert Morris	39 GREAT DOCK ST	55	PA
Frederick A. Muhlenberg	24 CHATHAM ROW	39	PA
John P. Muhlenberg	24 CHATHAM ROW	43	PA
John Page	19 MAIDEN LANE	46	VA
Josiah Parker	57 MAIDEN LANE	37	VA
George Partridge	15 GREAT DOCK ST	49	MA
William Patterson	51 GREAT DOCK ST	43	NJ
George Read	15 WALL ST	55	DL
James Schuremon	47 LITTLE DOCK ST	33	NJ
Philip John Schuyler	ADDRESS UNKNOWN	55	NY
Thomas Scott	MR HUCKS CNR SMITH & WALL STS	50	PA
Theodore Sedgwick	15 GREAT DOCK ST	42	MA
Joshua Seney	15 WALL ST	33	MD
John Sevier	ADDRESS UNKNOWN	44	NC
Roger Sherman	59 WATER ST	68	CN
Peter Silvester	45 MAIDEN LANE	55	NY
Thomas Sinnickson	47 LITTLE DOCK ST	44	NJ
William L. Smith	BROAD WAY NXT TO SPANISH MINISTER	31	SC
William Smith	52 SMITH ST	61	MD
Joseph Stanton	ADDRESS UNKNOWN	50	RI
John Steele	ADDRESS UNKNOWN	25	NC
Michael J. Stone	15 WALL ST	42	MD
Caleb Strong	15 GREAT DOCK ST	44	MA
Jonathon Sturges	47 BROAD ST	49	CN
Thomas Sumter	40 WALL ST	54	SC
George Thacher	47 BROAD ST	35	MA
Jonathon Trumbull	195 WATER ST	49	CN
Thomas T. Tucker	MR HUCKS CNR SMITH & WALL STS	44	SC
Jeremiah van Rensselaer	MR STRONGS NR ALBANY PIER	50	NY
John Vining	19 WALL ST	30	DL
Jeremian Wadsworth	195 WATER STREET	46	CN
John Walker	ADDRESS UNKNOWN	45	VA
Alexander White	19 MAIDEN LANE	51	VA
Hugh Williamson	ADDRESS UNKNOWN	54	NC
Paine Wingate	47 BROAD ST	49	NH
Henry Wynkoop	MR VANDOLSOMS NR BEAR MKT	52	PA

Number of cases read: 95 Number of cases listed: 95

At the next level of historical sophistication, participants might react to the somewhat conventional wisdom among most Americans that the members of the 1st Congress were in general middle-aged, not well-educated, and made their living from farming. The historical questions would be: "What were the ages of the 95 Congressmen?" And, "What were the educational levels and occupations of the congressmen?" In the following examples, the answer to the first question is displayed as a high-resolution chart, and a cross-classification table displays the data related to the second question. Several things must be kept in mind as the LIST, CHART, and TABLE are studied. First, SPSS instructions are entered on a keyboard and it takes only 10-15 seconds to enter commands and another 10-15 seconds for results to be displayed. Second, visuals can be displayed on a PC monitor, a television set with the proper adapter, projected from a Liquid Crystal Display platform, or over a Local Area Network. Third, participants generate their own historical questions and enter commands and relate answers to the other materials of the historical case study, <u>Historian: Building a New Nation in 1789</u>. Fouth, while data are being entered participants can elect, say, to have music of the early Federal Period played or visuals related to New York City in 1789 displayed.

CHART 1

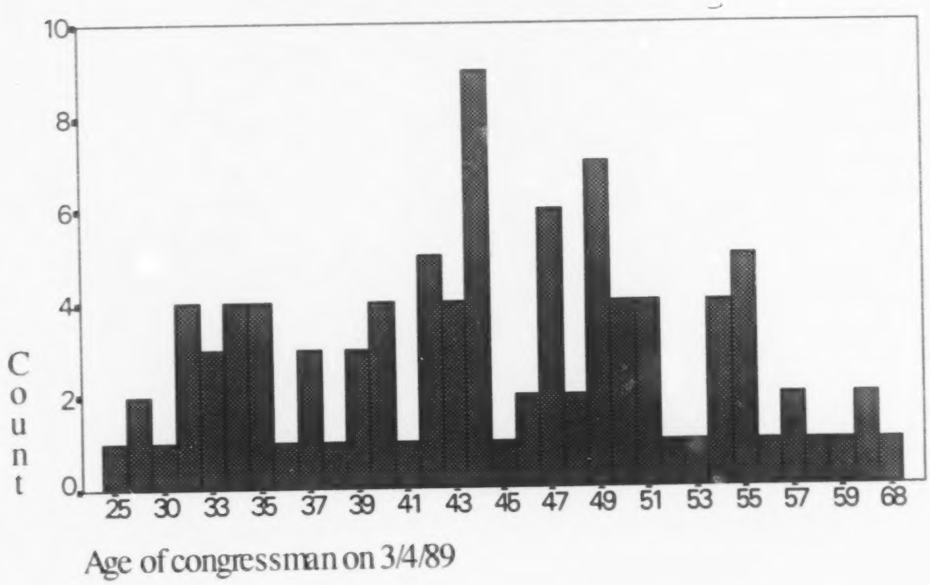

TABLE 1

```
OCCUP  Occupation  by  EDUCAT  Education

Count           |
       Row Pct  |College  Attended Apprenti No posts Undeterm
       Col Pct  |graduate  college  ced, no  econdary ined       Row
       Tot Pct  |    1    |    2    |    3    |    4    |    5    | Total
OCCUP   --------+---------+---------+---------+---------+---------+
            1   |     7   |     4   |         |     8   |     1   |    20
  Agriculture   |   35.0  |   20.0  |         |   40.0  |    5.0  |   21.1
                |   16.3  |   33.3  |         |   57.1  |    9.1  |
                |    7.4  |    4.2  |         |    8.4  |    1.1  |
                +---------+---------+---------+---------+---------+
            2   |     4   |     1   |     4   |     2   |     3   |    14
  Commerce      |   28.6  |    7.1  |   28.6  |   14.3  |   21.4  |   14.7
                |    9.3  |    8.3  |   26.7  |   14.3  |   27.3  |
                |    4.2  |    1.1  |    4.2  |    2.1  |    3.2  |
                +---------+---------+---------+---------+---------+
            3   |     1   |         |         |     1   |         |     2
  Education        |  50.0  |        |        |  50.0  |        |   2.1
                   |   2.3  |        |        |   7.1  |        |
                   |   1.1  |        |        |   1.1  |        |
                   +--------+--------+--------+--------+--------+
                 4 |    25  |     4  |    11  |     2  |     5  |    47
  Law and politics |  53.2  |   8.5  |  23.4  |   4.3  |  10.6  |  49.5
                   |  58.1  |  33.3  |  73.3  |  14.3  |  45.5  |
                   |  26.3  |   4.2  |  11.6  |   2.1  |   5.3  |
                   +--------+--------+--------+--------+--------+
                 5 |     4  |        |        |        |        |     4
  Medicine         | 100.0  |        |        |        |        |   4.2
                   |   9.3  |        |        |        |        |
                   |   4.2  |        |        |        |        |
                   +--------+--------+--------+--------+--------+
                 6 |     2  |     2  |        |        |     1  |     5
  Ministry         |  40.0  |  40.0  |        |        |  20.0  |   5.3
                   |   4.7  |  16.7  |        |        |   9.1  |
                   |   2.1  |   2.1  |        |        |   1.1  |
                   +--------+--------+--------+--------+--------+
                 7 |        |     1  |        |     1  |     1  |     3
  Military and rel |        |  33.3  |        |  33.3  |  33.3  |   3.2
                   |        |   8.3  |        |   7.1  |   9.1  |
                   |        |   1.1  |        |   1.1  |   1.1  |
                   +--------+--------+--------+--------+--------+
            Column      43       12       15       14       11       95
             Total    45.3     12.6     15.8     14.7     11.6    100.0

Number of Missing Observations:  0
```

Table 2 was generated from SPSS commands related to the historical question "Were the political/geographic divisions that resulted in the Civil War of 1861-1865 present in the 1st Congress?" Examination of the table indicates the relationship between congressmen's attitude toward the Constitution and their area of origin. Expected frequencies and appropriate non-parametric statistics are included in the table.

TABLE 2

```
GEOAREA  Geographic area  by  ATTCONST  Attitude toward constitution

                           Count |
                         Exp Val |
                         Row Pct |Federali Antifede
                         Col Pct |st       ralist     Row
                         Tot Pct |      1 |      2 | Total
               GEOAREA  --------+--------+--------+
                               1 |     22 |     3  |    25
                New England stat |   19.1 |    5.9 | 26.6%
                                 |  88.0% |  12.0% |
                                 |  30.6% |  13.6% |
                                 |  23.4% |   3.2% |
                                 +--------+--------+
                               2 |     25 |     3  |    28
```

```
                   Middle Atlantic  |   21.4  |    6.6  | 29.8%
                                    |  89.3%  |  10.7%  |
                                    |  34.7%  |  13.6%  |
                                    |  26.6%  |   3.2%  |
                                    +---------+---------+
                                  3 |     25  |     16  |    41
                    Southern states |   31.4  |    9.6  | 43.6%
                                    |  61.0%  |  39.0%  |
                                    |  34.7%  |  72.7%  |
                                    |  26.6%  |  17.0%  |
                                    +---------+---------+
                             Column       72        22        94
                              Total    76.6%     23.4%    100.0%

      Chi-Square                    Value           DF              Signif'e
--------------------            -----------        ----             --------

Pearson                             9.90923          2                .00705
Likelihood Ratio                   10.03311          2                .00663
Mantel-Haenszel test for            7.47129          1                .00627
     linear association

Minimum Expected Frequency -      5.851

Number of Missing Observations:  1
```

Historian: Building a New Nation in 1789 and the database CONGRESS are heuristic in nature, designed to lead the reader into political, social, and economic investigations of the 1st Congress. The data exists to be interpreted, and the number and productiveness of topics is limited only by the imagination and quality of the research questions and hypotheses posed by the investigator.

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CULTURAL CHARACTERISTICS AND PERCEPTIONS OF COUNTRY CORRUPTION

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Abstract

Globalization has increased the need for managers (and future managers) to predict the potential for country corruption. Case writers and instructors need an understanding of why corruption develops more in some countries than in others so they can guide their students' understanding of ethical dilemma and establish appropriate controls. This paper examines the relationship between Hofstede's cultural dimensions and how country corruption is perceived. Power distance, individualism, uncertainty avoidance and masculinity were all found to be significantly associated with perceived country corruption. They were also found to explain a significant portion of the variance in perceived corruption.

INTRODUCTION

Current headlines suggest that corruption is rampant throughout the world, whether it is the bribery scandal of the 2002 Winter Olympics or the sleaze of the European Parliament. A study by the U.S. Department of Commerce indicates that the corrupt practices in international business are "widespread and growing" [Greenberger, 1995]. Transparency International (TI), a lobbying coalition against corruption in international business, contends that corruption is not merely a problem in third world nations, but is a threat to clean government in Europe as well [Holman, 1994]. More recently, revelation of corruption has brought down the governments of Indonesia, Italy, Brazil, Pakistan, and Zaire. Earlier in this decade, corruption shook the governments of South Korea, Thailand, Bulgaria, India, Russia, Nigeria, Taiwan, and even Britain's Conservative government [The Economist, 1999]. The scale of graft in some developing countries is so great that it not only risks political unrest but a backlash against free-market reform [Elliott, 1994].

Until recently economic studies of corruption were rather limited. Some economists argued that corruption was a useful training for entrepreneurship [Elliott, 1994]. Now a flurry of recent economic studies has shown that corruption is closely connected to terrible economic costs. The IMF found that countries with a lot of corruption have less GDP going into investment, and lower growth rates. Other economists have found that corruption acts as a tax on foreign direct investment and may raise the tax rate by over 20 percent, increase operating costs of corporations by 10 to 20 percent, and reduce profits by about a third. One World Bank memo suggests that 20-30 percent of its loans to Indonesia ended up in the pockets of local officials and their friends [The Economist, 1999: 22-24]. There is an increasing recognition that corruption is a major impediment to development and a continuous challenge to free trade.

While the war against corruption may remain a slogan for some, recent developments suggest a shift in making international business conduct less corrupt. Beginning in 1977, the U.S. Congress passed the Foreign Corrupt Practices Act that prohibited major payments to public officials to influence their decisions. However its impact may be limited because despite heavy penalties that included multi-million dollar fines and jail sentences, only one case a year on average has actually been prosecuted. Recognizing the need for broader international standards of conduct, a group of major multinational firms from the U.S., Europe, and Japan developed the Caux Principles for Business as guides for ethical behavior in their firms [Cavanagh, 1998].

More recently, multilateral lenders like the IMF and the World Bank have joined many of the largest trading nations in an effort to stop "grand corruption" at its source --multinationals -- that bribe public officials to obtain contracts, in mainly poor countries. At the February, 1999 convention of the Organization for Economic Cooperation and Development (OECD) all 34 signatories are expected to make bribery a criminal offense. This concerted attempt to control corruption has been an alliance of aid donors, legislators, business people, and ordinary people who no longer tolerate the corruption of its politicians. Lenders such as the World Bank and the IMF are seeking to link their aid to poor countries based on the level of corruption expected. The World Bank in 1997 concluded that where corruption is predictable, it harms investment less than where it is capricious.

A big question for multinationals as well as for lending institutions is, is it possible to predict corruption? If so, lenders and corporations can avoid cheating members of several groups -- taxpayers, shareholders, and the public by not distributing certain spoils to a privileged group. This paper is designed to determine if corruption can be predicted based on cultural values as measured by Hofstede's different dimensions.

PREVIOUS RESEARCH

Implicit in most of the comparative studies on ethics is the assumption that cultural differences between countries are a major reason behind the variations in ethical beliefs across nations. Unfortunately, cultural beliefs rarely focus just on ethics but deal with broader dimensions. While an earlier study by Nyaw & Ng [1994] found that Hofstede's measure of culture was very limited in predicting ethical beliefs across nations, they felt that differences in religious beliefs, educational systems, and family cohesiveness in their study could have shaped the responses. Hofstede & Bond's [1988] recent scale on the Confucian Work Dynamism is evidence of how important family philosophy can influence cultural values.

Desai & Rittenberg [1997] suggest that multinational managers will be required to be more ethical if they are to be accepted in third world countries. From the corporate perspective no aspect of globalization is more difficult to deal with than business ethics; the struggle for ethical conduct gets more complex abroad [Duerden, 1995].

IMPLICATIONS OF HOFSTEDE'S CULTURAL DIMENSIONS

Hofstede [1980] argued that people in various cultures have different collective, mental programming that makes them unique. His research demonstrated national cultural differences by individual, environmental programming. He concluded that national cultures differ along four dimensions: power distance; uncertainty avoidance; individualism-collectivism and masculinity. Recent research has argued that these Hofstede's cultural dimensions are associated with the corruption and ethics of nations in trade practices. Each of these dimensions is discussed below with hypotheses we will test in this research.

In 1986 Harrison and McKinnon proposed incorporating Hofstede's cultural dimensions for analyzing changes in corporate financial reporting regualtion at the nation-specific level. Complementing this approach is a proposal by Gray [1988] that a theoretical framework incorporating Hofstede's cultural dimensions could be used to explain and predict international differences in accounting and to identify patterns of accounting developments internationally.

Power Distance

Hofstede [1980] suggested that power distance indicates the acceptance of power distribution in the society. Societies high in power distance believe that there should be a hierarchy of power; some should rule and others should follow. In high power distance societies superior's legitimate power is an accepted fact. Low power distance societies believe that inequality in society should be minimized and that all people should be interdependent and accessible. In low power distance societies superior's power is legitimate but is open to evaluation by the masses, if legally permitted.

People in high power distance view others as a potential threat to their power and therefore, they do not trust others easily. Hofstede [1980] also argued that in a high power distance culture it is difficult to achieve cooperation among the powerless because of the low faith in people norm. Therefore, one would expect a strong association between high power distance and high perceived national corruption.

Hypothesis 1: High cultural power-distance will have associated with high perceived national corruption.

Uncertainty Avoidance

Uncertainty avoidance is the extent that society is threatened by uncertain and ambiguous situations [Hofstede, 1980]. Where uncertainty avoidance is low, ambiguity is an accepted part of every day life. In such societies hard work is frowned upon and risk taking is acceptable. These societies prefer few rules and more dissent is expected. Societies high in uncertainty avoidance perceive a need for rules and regulations and maintain rigid codes of belief and behaviors. Those breaking rules in these societies are in need of reform. Hard work is rewarded and nationalism is pervasive. Ambiguity and uncertainty are threats that must be fought. Structured order is preferred in such societies. Like Power distance, uncertainty avoidance has consequences for the way people build their institutions and organizations.

Breaking and/or challenging laws and regulations seems to be more accepted in societies with low uncertainty avoidance. Here deviation from the norm is not considered threatening to society and tolerance for alternative behaviors is shown. One would expect individuals in high uncertainty avoidance societies to prefer following rules and regulations to avoid ambiguous situations.

Hypothesis 2: High cultural uncertainty avoidance will be associated with low perceived national corruption.

Individualism-Collectivism

Hofstede [1980] argued that individualism and collectivism are opposites. Individualism reflects a society in which individuals are autonomous and expected to care for themselves and their family. Alternatively, in collectivist societies individuals belong to extended social groups. In collectivist society expertise, order, duty and security are preferred. Society is marked by stable societal relationships. Group norms and practices are important and individual identity is tightly linked to the social system.

Individuals in individualistic societies are more calculate, choosing involvement with groups based upon individual rather than collective gain. Individual and private opinion is prized. Individual financial security is sought.

If a country is high in individualism, staffing and appraisal emphasis would be on credentials and visible performance outcomes and rewards would be performance-based rather than seniority or some "family" connections with low individualism that might encourage corruption [Gómez-Mejía, Balkin, & Cardy, 1998].

The direction of the corruption - individualism-collectivism relationship is based upon how the dimension views values. In collectivist societies value standards differ for different groups or clans. Thus, multiple, competing value sets can be found in a collectivist society. Hofstede [1980] called this particularism. Alternatively, in an individualistic society people believe that the same value standards should apply to all, a universalistic view of values. Because a single standard does not exist in a collectivist society one would expect perceptions of corruption to be higher there than in a society in which individuals adhere to and support a single value set.

Hypothesis 3: High cultural individualism will be associated with low perceived national corruption.

Masculinity

The fundamental issue here addresses the way in which a society allocates social (as opposed to biological) roles. Low masculinity or feminine culture describes societies that care for others, appreciate the quality of life and is sympathetic to the unfortunate. In short, the society is more nurturing and less assertive. Societies with high masculinity tend to focus on performance, are work oriented and ambitious. The successful achiever is revered, machismo is appreciated.

In countries low in masculinity, staffing/ appraisal practices would most likely not be biased in favor of male oriented characteristics that focus on material possessions. The reward system would more likely be well developed "equity goals" for pay determination rewards [Gómez-Mejía, Balkin, & Cardy, 1998]. The Masculine orientation can also influence the importance of different needs such as in the feminine culture of Sweden or Finland where people value quality of life and working relationships, so that social needs could dominate over productivity [Adler, 1997]. In a feminine country, meaningful rewards are time-off, improved benefits, or symbolic rewards [Francesco & Gold, 1998].

Because low masculinity or feminine suggests a society of caring, compassion and sympathy, one can hypothesize that corruption would be low. Corruption involves typically taking advantage of another. This seems to be much more descriptive of the high masculinity culture.

Hypothesis 4: High cultural masculinity will be associated related with high perceived national corruption.

METHODOLOGY

The above hypotheses were tested using a sample of countries that were on both Hofstede's [1980] indices for power distance, uncertainty avoidance, individualism-collectivism and masculinity and Transparency International's 1998 Corruption Perceptions Index. This resulted in a sample of 42 countries. The average Corruption Perception Index Score was 5.82 with a standard deviation of 2.45 (a score of 10 is highly clean). The average scores for the power distance, uncertainty avoidance, individualism - collectivism, and masculinity were 53.42 (sd = 21.72), 63.95 (sd = 23.54), 47.63 (sd = 25.53) and 49.81 (sd = 19.28) respectively.

Although Hofstede's research has been criticized for being based largely on surveys of employees working for one company (IBM) and for ignoring the importance of cultural differences within countries, Jaeger [1986] contends that the dimensions are a fair survey of cultural differences. Despite these limitations, Hofstede's indices are often used in research contrasting cultures [e.g., Winch and Millar, 1997; Humphreys, 1996; Yeh and Lawrence, 1995). Thus, Hofstede's [1980] dimensional indices were used in this analysis.

Transparency International (TI) developed the 1998 Corruption Perceptions Index as a comparative assessment of country's integrity performance. The score is a compilation of the perceptions of the degree of corruption as seen by businesspeople, risk analysts and the general public. The index has been found to have acceptable validity and has been used in a number of studies [Fons, 1999; Frank and Schulze, 1998; Lambsdorff, 1997]. The scale ranges from a low of 2 with Indonesia (most corrupt) and a high of 10 with Denmark (most clean). Data used for this testing is shown in table 1. Multiple regression and correlation were used to test the proposed hypotheses.

TABLE 1
RAW DATA

Country	Corrupt	Power	Indiv.	Masc.	Uncert.
Argentina	3.00	49.00	46.00	56.00	86.00
Australia	8.70	36.00	90.00	61.00	51.00
Austria	7.50	11.00	55.00	79.00	70.00
Belgium	5.40	65.00	75.00	54.00	94.00
Brazil	4.00	69.00	38.00	49.00	76.00
Canada	9.20	39.00	80.00	52.00	48.00
Chile	6.80	63.00	23.00	28.00	86.00
Columbia	2.20	67.00	13.00	64.00	80.00
Costa Rica	5.60	35.00	15.00	21.00	86.00
Denmark	10.00	18.00	74.00	16.00	23.00
Finland	9.60	33.00	63.00	26.00	59.00
France	6.70	68.00	71.00	43.00	86.00
Germany	7.90	35.00	67.00	66.00	65.00
Greece	4.90	60.00	35.00	57.00	112.00
Hong Kong	7.80	68.00	25.00	57.00	29.00
India	2.90	77.00	48.00	56.00	40.00
Indonesia	2.00	78.00	14.00	46.00	48.00
Ireland	8.20	28.00	70.00	68.00	35.00
Israel	7.10	13.00	54.00	47.00	81.00
Italy	4.60	50.00	76.00	70.00	70.00
Japan	5.80	54.00	46.00	95.00	92.00
Malaysia	5.30	104.00	26.00	50.00	36.00
Mexico	3.30	81.00	30.00	69.00	82.00
Netherlands	9.00	38.00	80.00	14.00	53.00
New Zealand	9.40	22.00	79.00	58.00	49.00

Norway	9.00	31.00	69.00	8.00	50.00
Country	**Corrupt**	**Power**	**Indiv.**	**Masc.**	**Uncert.**
Pakistan	2.70	55.00	14.00	50.00	70.00
Peru	4.50	64.00	16.00	42.00	87.00
Philippines	3.30	94.00	32.00	64.00	44.00
Portugal	6.50	63.00	27.00	31.00	104.00
Singapore	9.10	74.00	20.00	48.00	8.00
South Africa	5.20	49.00	65.00	63.00	49.00
South Korea	4.20	60.00	18.00	39.00	85.00
Spain	6.10	57.00	51.00	42.00	86.00
Sweden	9.50	31.00	71.00	5.00	29.00
Switzerland	8.90	34.00	68.00	70.00	58.00
Taiwan	5.30	58.00	17.00	45.00	69.00
Thailand	3.00	64.00	20.00	34.00	64.00
Turkey	3.40	66.00	37.00	45.00	85.00
United Kingdom	8.70	35.00	89.00	66.00	35.00
United States	7.50	40.00	91.00	62.00	46.00
Venezuela	2.30	81.00	12.00	73.00	76.00

FINDINGS

The first hypothesis was designed to assess the relationship between cultural power distance and country perceived corruption. Theory suggests that high power distance should be significantly associated with high corruption because of the lack of trust and cooperation between social groups. Therefore, a positive correlation was hypothesized. A one tail test of a Pearson correlation was significant (r = . 676; p < .000). Hypothesis 1 is supported (see table 2).

TABLE 2
CORRELATION
HOFSTEDE'S INVENTORIES - 1998 CORRUPTION PERCEPTION INDEX
SINGLE-TAIL TESTS

	CORRUP98	IDV	MAS	PDI	UAI
CORRUP98	1.0000				
IDV	.671***	1.0000			
MAS	-.274*	.0340	1.0000		
PDI	.676***	-.6239***	.1519	1.0000	
UAI	-.463***	-.3090	.1028	.1305	1.0000

Hypothesis 2 examined the relationship between cultural uncertainty avoidance and country perceived corruption. It was posited that countries that are by nature uncomfortable with uncertainty (high uncertainty avoidance) would prefer to live by the structure rules and regulations. Thus, a negative correlation (high uncertainty avoidance and low perceived corruption) was hypothesized. As expected, the correlation between uncertainty avoidance and the corruption scale was significantly negative (r = -. 463; p < .000). Hypothesis 2 is supported.

The third hypothesis argued that individualism and low corruption would be significantly positively correlated. Because collectivist societies have multiple, competing values a single acceptable standard does not exist. Individualistic societies believe that a single standard should apply to everyone. The correlation between individualism and the corruption index was significantly positive (r = .671; p < .000). This supports result hypothesis 3.

The final hypothesis tested the relationship between masculinity and corruption. Countries with strongly masculine cultures were expected to have higher perceived corruption than countries with more feminine cultures. Thus, a significantly negative relationship between masculinity and the corruption index was posited.

Testing revealed a correlation of -. 274 which is significant at the .05 alpha level. This result supports hypothesis 4. More masculine societies are perceived to have higher corruption indices as independent variables and the 1998 perceived corruption index as the dependent variable resulted in a statistically significant model (F = 19.997, p < .000). All four cultural dimensions were significant suggesting that they all contribute to explaining the variance in perceived corruption (see table 3). The adjusted r square suggests that the model explains 65% of the variance in perceived corruption. The multiple regression suggests that the cultural dimensions of a country can explain the perception people have about the corruption of that country.

TABLE 3
REGRESSION COEFFICIENTS

Dependent = 1998 Corruption Perception Index

Variable	B	SE B	Beta	T
Individualism	.033	.012	.342	2.704*
Masculinity	-.025	.012	-.198	-2.063*
Power Distance	.045	.014	.395	3.232**
Uncertainty Avoidce-	.030	.010	-.287	-2.910**
(Constant)	10.067	1.472		6.840***

* p < .05
** p < .01
*** p < .001

Multiple R	.827
R Square	.684
Adjusted R Square	.650

DISCUSSION

Accrediting associations such as the AACSB have increased expectations of coverage of ethical concepts in schools of business. Increased corruption internationally suggests a need for a framework to discuss ethics in international cases. Unfortunately, most teaching notes accompanying international cases lack any unifying concepts or theory to examine ethical situations. The results of this study can assist case writers and instructors in helping students understand why bribery and other corruption might occur in some countries and not in others. The study can also assist managers in recognizing that corruption is somewhat predictable and that many countries are developing efforts to curtail corruption.

While this study does not provide all the answers to solving corporate corruption, it presents a beginning to understand the cultural implications of corruption. More research is needed to refine the potential theory that may be developed.

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APPENDIXES

ABOUT WACRA®...

History

Founded in 1984, the World Association for Case Method Research & Case Method Application (WACRA®) evolved from contacts of professors, researchers, policy-makers, professionals and business executives into a worldwide interdisciplinary organization. These individuals shared the common interest of studying and applying the Case Method in research, teaching, planning, training and development. Professionals and academicians from fifty countries have participated in international (summer) conferences on Case Method Research & Application in Lausanne, Switzerland (1980), London, UK (1984, 1985, 1987), Boston, U.S.A. (1988, 1989), Enschede, Netherlands (1990), Berlin Germany (1991), Limerick, Ireland (1992), Bratislava, Slovakia - Vienna, Austria (1993), Montreal, Canada (1994), Leysin, Switzerland (1995), Warsaw, Poland (1996), Edinburgh, Scotland (1997), Marseille, France (1998) and Cáceres, Spain (1999).

The year 2000 summer conference will take place from July 2 - 5, 2000 at The Central European University in Budapest, Hungary. WACRA '2000 will begin with a pre- conference event in Munich, Germany. Delegates have the opportunity to travel by train on the tracks of the famous Orient Express to Vienna, Austria, spend one full day and and two nights in Vienna and then travel on board of the 'Majestic Imperator,' the *train de luxe* of Emperor Franz Josef and Empress Sisi to Budapest, Hungary. The main conference will take place at the Central European University in Budapest. A post conference cultural-educational tour will take participants to different parts of Hungary, Slovakia and will end in Vienna, Austria.

In 2001 the University of Lund in Lund, Sweden will host the conference. Advance planning includes activities in Sweden (main conference site), Denmark and Norway. For those who really like long range planning: locations in Cuba, Germany, Greece, and Japan are under consideration for the year 2002.

Since 1998, WACRA® and ACT - The Academy for Creative Teaching - cooperate in a series of winter conferences on Creative Teaching in Lucerne, Switzerland. ACT3, the 3rd international conference on Creative Teaching is scheduled for January 5-8, 2000 at the Grand Hotel National in Lucerne, Switzerland and ACT4 will be hosted by the Wirtschaftsuniversität (Business School) in Vienna, Austria in early January of 2001.

The Case Method

The Case Method can be defined in a broad sense by contrasting it with the lecture method. Instead of textbooks, the Case Method uses partial, historical descriptions of specific situations enabling students to discover and develop their own unique framework for problem-solving. The Case Method achieves this goal efficiently and effectively. Data and information are presented in narrative form to encourage student involvement by solving problems actively, by identifying sources of information necessary for problem-solving, by engaging in critical thinking and through group work. (The group work contributes to the development of individuals able and willing to work collegially, etc.). Although "cases" have been used in one form or another by both law and medicine for a long time, the Case Method in the teaching of management and other disciplines is relatively new. The Harvard Business School is well known for its innovative role in this regard. The method has applications far beyond the managerial, business orientation so familiar to many.

New applications for the Case Method in disciplines other than management and business are being explored and research is being conducted on this basis. The Case Method is increasingly applied in higher education and educational administration, the instruction (and operation) of the social sciences, the arts, engineering, agriculture, strategic policy planning, and personnel development in different parts of the world.

The development and increasing affordability of new communication technologies is changing the educational environment for teachers, trainers and students. Institutions worldwide are investigating and investing in distance education, video-based instruction , and computer-assisted instruction. Nine volumes of international case method research papers, cases and presentations attest to WACRA®'s success in providing an important forum in "managing change in multi-cultural settings" and in promoting cross cultural dialogue and development in Higher Education and training.

Objectives

The objectives of WACRA® are to explain, research and advance the use of the case method in teaching, planning and training at all levels; to promote and encourage research using the case method, with special emphasis placed on studying the teaching effectiveness in varied teaching-learning systems; to coordinate development of interactive pedagogical methods involving the case method, simulations and games; to augment the available body of research and teaching materials; to foster interdisciplinary applications and to encourage cooperation with the public sector, the business community and other case method oriented professional specialties on a worldwide basis.

Functions

WACRA® 's main function at the present time is to coordinate research, to facilitate the organization of forums, public discussions, workshops, training sessions, lectures and conferences and develop a worldwide network. WACRA® organizes annual conferences at various locations around the world to provide opportunities and encourage the exchange of ideas, the presentation of planned, on-going and completed research, and the sharing of applications, simulations and games. Papers and manuscripts accepted (double blind peer review - acceptance rate for publication on average is between thirty and forty percent) and presented at the annual conferences are published. The WACRA® NEWSLETTER informs members about ongoing research projects, employment (exchange) opportunities, new publications and releases, curriculum development and other developments in interactive pedagogy. WACRA® supports and cooperates with national Case Method Organizations, with Case Clearing Houses worldwide.

Affiliated Associations

Affiliated Associations are BACRA - Baltic Association for Case Method Research & Application at Kaunas University in Panevezys, Lithuania, CZACRA - Czech Association for Case Method Research & Application at Mendel University for Agriculture and Forestry in Brno, Czech Republic and NACRA - North American Case Research Association at the University of Tampa, Florida, U.S.A.

Advantages of Membership

Membership in *WACRA®* is open to all individuals and organizations wishing to advance the objectives of the association. As a member you receive the WACRA® NEWSLETTER, substantial discounts on WACRA® publications, preferential rates at all WACRA® sponsored meetings, notices of all activities and calls for papers. As a member you can receive training and assistance in case writing and teaching; once you are a member, payment of full registration fee for any meeting includes membership in WACRA® for the following calendar. You have the opportunity for networking, consulting and to associate with other professionals working with cases, simulations and games on a truly international scale.

Membership

Membership in WACRA® is open to all individuals and organizations in all countries who wish to advance the objectives of the association and to advance professional standards in the field. The various classes of membership and annual dues which provide for the continuing support of WACRA®, are as follows:

Regular Member US $65: Any individual (teacher, researcher, government official or representative, business executive, attorney, consultant) who wishes to assist actively in attaining the goals of WACRA®.

Organization Member US $350: A special class of membership through which other existing associations or organizations can lend their support in meeting the goals of WACRA®. Organizations eligible for this class of membership include foundations, educational, governmental units, professional, business, and industrial groups.

Sustaining Member US $500: A special class of membership available to any individual or organization wishing to offer more substantial financial support to WACRA®.

Associate Member US $55: Advanced students.

You are cordially invited to join, to participate and to share your expertise and experiences with colleagues from around the world.

WACRA® en quelques mots

Fondée en 1984, WACRA® est à l'origine une organisation où des professeurs, des chercheurs, des preneurs de décision, des professionnels et des gens d'affaires se rencontraient. Elle est ensuite rapidement devenue une association internationale et interdisciplinaire qui accueille des professionnels et des universitaires de 50 pays.

WACRA organise des symposiums, des ateliers, des sessions de formation, des conférences et chaque année un congrès international où les membres peuvent échanger leurs idées, présenter leurs travaux de recherche et leurs cas. Toute personne ou toute organisation qui souhaite faire progresser les objectifs de l'association peut devenir membre.

Au cours des dernières années, le congrès annuel s'est tenu à Lausanne (Suisse), Londres (Angleterre), Boston (Etats Unis), Enschede (Pays Bas), Berlin (Allemagne), Prague (République Tchèque), Limerick (Irlande), Bratislava (Slovaquie) et Vienne (Autriche), Montréal (Canada), Leysin (Suisse), Varsovie (Pologne), Edimbourg en Ecosse (Scotland), Marseille (France) et Cáceres, Espagne. En 2000, c'est l'Université de l'Europe Centrale (Central European University) à Budapest, Hongrie qui accueillera les membres du 2 au 5 juillet 2000. Pour l'année 2001, l'Université de Lund, à Lund, Suède reçevera la WACRA du 17 au 20 juin, 2001. Les activités du congrès auront lieu en Suède, Denemark et Norvège. Pour ceux qui prefèrent la planification à long term, des sites à Cuba, en Allemagne, en Grece et au Japon pour des prochaines rencontres, seront évaulués.

Plusieures associations affilliées sont nées au fil des ans. Celles-ci comprennent BACRA - Baltic Association for Case Method Research &Application - à l'Université technologique Kaunas à Panevezys en Lituanie. CZACRA - Czech Association for Case Method Research & Application - à l'Université d'Agriculture Mendel à Brno en République Tchèque et enfin NACRA - North American Case Research Association - à l'Université de Tampa à Tampa en Floride, Etats Unis.

Ces différentes associations ont un même objectif qui est la promotion de la méthode des cas comme outil pédagogique privilégié utilisé dans l'enseignement, la formation et la planification. Ces associations cherchent également à encourager la méthode des cas comme outil de recherche et à coordonner les activitées d'écriture de cas. Elles facilitent également la coopération entre le secteur public, la communauté des gens d'affaires et les professionnels qui utilisent la méthode des cas. Plus récemment, les jeux, simulations et autres méthodes interactives d'apprentissage et d'enseignment sont venus s'ajouter à la méthode des cas.

Les membres reçoivent le Bulletin de l'association (WACRA® NEWSletter), des rabais intéressants sur toutes les publications faites par WACRA®, des taux préférentielles sur toutes rencontres commanditées par WACRA®, ainsi qu'une mise à jour de tous les événements et demandes d'articles. Les membres peuvent faire des stages et recevoir de l'aide aussi bien pour rédiger un cas que pour enseigner en utilisant cette méthode. Ils peuvent bénéficier du réseau WACRA®, consulter et s'associer avec d'autres membres qui utilisent la méthode des cas à l'échelle internationale.

¿WACRA®?

Creada en 1984, WACRA® se componía al principio de un grupo de profesores, investigadores, tomadores de decisíon, profesionales y ejecutivos. Al pasar los años el grupo se transformó en una asociación internacional e interdisciplinaria de profesionales y académicos que pertenecen a 50 países.

WACRA® organiza foros, simposios, talleres, sesiones de formación y conferencias. Además cada año la asociación ofrece su congreso international. Durante cuatro días los congresistas tienen la posibilidad de intercambiar ideas, presentar sus trabajos de investigación y comunicar el resultado de sus trabajos de escritura. Cada persona u organización que quiere favorecer los objetivos de la asociación puede ser miembro.

Los congresos anteriores se hicieron en Lausanne (Suiza), Londres (Reino Unido), Enschede (Países Bajos), Boston (Estados Unidos), Berlín (Alemania), Praga (República Checa), Limerick (Irlanda), Bratislava (Eslovaquia) y Viena (Austria), Montreal (Canadá), Leysin (Suiza) y Varsovia (Polonia), Edimburgo (Escocia), Marsella (Francia) y Cáceres (España). En 2000, la Universidad de Europa Central (Central European University) en Budapest, Hungaria recibirá a los congresistas del 2 al 5 julio de 2000. En el año 2001 la Universidad de Lund, en Lund (Suecia) auspiciará la conferencia. 'Advance Planning' (planificación avanzada) incluye actividades en Suecia (lugar principal de la conferencia), Dinamarca y Noruega. Para aquellos a quien en realidad le gusta la planificación a largo plazo: localidades en Cuba, en Alemania, Greca y Japón estan bajo consideració para año 2002.

Las asociaciones afiliades son BACRA - Baltic Association for Case Method Research & Application - que está en la Universidad tecnológica Kaunas en Panevezys (Lituania), CZACRA - Czech Association for Case Method Research & Application - está en la Universidad de Agricultura Mendel en Brno (República Checa), NACRA - North American Case Research Association - está en la Universidad de Tampa en Tampa (Florida, Estados Unidos).

Los objetivos de estas asociaciones consisten den promover el uso del método de los casos aplicado a la enseñanza, a las sesiones de formación y de planificación. Las asociaciones se dedican también a valorizar el uso de ese método, a coordinar las actividades de escritura de casos y a favorecer la cooperación entre el sector público, la gente de negocios y los profesionales que utilizan métodos interactivos. El acento inicial ponía el enfoque sobre el método de los casos; desde hace unos años se incluyeron juegos, simulaciones y métodos de formación y de enseñanza interactivos.

Los miembros de la asociación reciben un boletín (WACRA® NEWSletter), descuentos interesantes sobre las publicaciones hechas por WACRA®, tarifas preferenciales para las reuniones organizadas por WACRA®. Los miembros reciben noticias sobre las actividades, solicitudes de artículos y pueden participar a sesiones de formación y recibir asistencia en escritura de casos y enseñanza por este método. Además tienen la oportunidad de formar parte de una red internacional que les permite consultar y asociarse con profesionales que trabajan con casos.

WACRA®

NEWS

Vol. XI No. 1

WACRA® - Member Application/Renewal

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Please include in your check the appropriate amount if you wish to receive one or more WACRA publications on Case Method Research & Application. Add $6 ($8 international orders) per book for handling & postage. Refer to details below.

Return this form with payment (check drawn on US bank or international money order) to WACRA today.

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Forging New Partnerships, 584 pages - hardcover only (ISBN 1- 877868-04-3) member price $40 ($49);

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CALL FOR PAPERS
CASE METHOD

RESEARCH AND APPLICATION (INCLUDING CASE WRITING)

18th INTERNATIONAL CONFERENCE at LUND UNIVERSITY

Lund, Sweden

June 17 - 20, 2001

"CASE METHOD TEACHING AND DISTANCE LEARNING"

With Cases, Multimedia, Simulations, and Other Interactive Methods

The case method can play an important role in solving problems and in teaching problem-solving, as well as in initiating and managing change. Thus this conference provides opportunities for participants to learn more about teaching using the case method and related instructional approaches in a variety of educational settings. Participants will have ample opportunity to meet colleagues from around the world with whom they can forge research partnerships. WACRA® conferences are interdisciplinary multinational forums for scholars in the disciplines and professional fields (such as business, communication, education, engineering, history, law, medicine, psychology, public policy, social work) and practitioners in business and industry, education and government.

Papers are solicited that analyze theory and practice using cases, simulations, videos and related instructional methods for problem solving, managing change and innovation. Priority will be given to papers that are interdisciplinary, international, and/or comparative. Papers reporting the application of cases in university and professional training programs in diverse settings and papers on the evaluation of the case method and its related forms for teaching and learning are encouraged. Contributions investigating challenges (and suggesting solutions) faced by business are also solicited. Proposals for case writing & development and actual cases placed in diverse settings are invited, e.g. joint-cross-cultural cases. While a main focus of the WACRA conferences is on using cases for teaching and problem-solving, scholarly papers that report research using the case method are welcome. WACRA is particularly interested in scholarly papers that enhance the understanding and collaboration between and among disciplines and international partners. The most innovative presentation and the outstanding paper are recognized.

Submissions should include three copies of the (1) a cover page including: title, name, affiliation, address, tel. & fax numbers and e-mail address of the author(s), (2) a proposal summary (not exceeding 4 pages) or the completed paper (not exceeding 15 pages). Download the manuscript guidelines from our web site below . The summary should state clearly the objectives, the framework, and the nature of the proposal and be responsive to the criteria used for review The name of the author(s) should not appear on the summary page to facilitate the blind peer review.

Include two stamped, self-addressed envelopes (for submissions from outside the U.S.A. include a Post Office International Answer Coupon) which will be used to acknowledge receipt of the proposal/paper and the results of the review. **All proposals and papers are due on or before January 15, 2001**. ***Completed papers received prior to January 15, 2001*** will be considered for publication. For further details visit our web site or contact us directly

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Please post or share this invitation with colleagues!

DEMANDE D'ARTICLES
MÉTHODE DES CAS
RECHERCHE, APPLICATION ET ÉCRITURE

DIX-HUITIÈME CONGRÈS INTERNATIONAL à LUND UNIVERSITY

LUND, SUÈDE
du 17 au 20 juin 2001

"LA MÉTHODE DE CAS ET L'ENSEIGNMENT Á DISTANCE"
avec cas, multimédia, simulations et autres méthodes interactives

La méthode des cas peut jouer un rôle important lorsqu'il faut résoudre des problèmes et enseigner à résoudre des problèmes tout comme lorsqu'il faut entreprendre et gérer le changement. Par conséquent ce congrès offre aux participants la possibilité d'apprendre plus sur l'enseignement par la méthode des cas et les méthodes d'enseignement apparentées dans des situations éducatives variées. Les participants pourront rencontrer des confrères du monde entier et développer des partenariats de recherche et d'enseignement. Les congrès de WACRA sont des forums interdisciplinaires et multinationaux pour des universitaires dans des disciplines traditionnelles et des domaines professionnels comme la gestion, la communication, l'éducation, l'ingénierie, l'histoire, le droit, la médecine, la psychologie, l'administration publique, le travail social et pour des praticiens dans le domaine des affaires et de l'industrie, de l'éducation et du gouvernement.

Nous sollicitons des articles qui analysent la théorie et la pratique en se servant de cas, de simulations, de vidéos et de méthodes d'enseignement apparentées pour résoudre des problèmes et gérer le changement et l'innovation. Nous donnerons la préférence aux articles interdisciplinaires, internationaux et/ou comparatifs. Nous encourageons les articles qui décrivent l'utilisation de cas à l'université et dans des programmes de formation professionnelle, lors de situations variées, ainsi que les articles qui traitent de l'évaluation de la méthode des cas et de ses différentes formes utilisées dans un contexte d'enseignement et d'apprentissage. Nous aimerions recevoir des contributions qui documentent les défis (et les solutions proposées) que rencontrent les gens d'affaires. Nous acceptons des textes sur l'écriture de cas et son développement ainsi que des cas réels décrivant des situations variées comme, par exemple, des cas interculturels. Même si lors des congrès nous mettons l'accent sur la méthode des cas comme une méthode d'enseignement et une méthode pour résoudre les problèmes, nous acceptons également des articles académiques qui décrivent la méthode des cas comme une méthode de recherche. WACRA s'intéresse particulièrement aux articles académiques qui améliorent notre compréhension de la collaboration qui existe entre et parmi les partenaires internationaux. Nous soulignerons la présentation la plus innovatrice ainsi que le meilleur article.

Vous devez soumettre vos projets en trois exemplaires de (1) la page couverture qui renferme les renseignements suivants sur le ou les auteurs: titre, nom, institution, adresse, numéros de téléphone et fax, adresse électronique, (2) un résumé du projet (qui ne doit pas dépasser 4 pages) ou de l'article terminé (qui ne doit pas dépasser 12 pages). Pour d'autres informations sur la rédaction de votre manuscrit, veuillez vous reporter à notre site internet dont l'adresse vous est donnée un peu plus bas. Le résumé doit indiquer clairement les objectifs, la structure et la nature du projet et répondre aux critères cités plus haut. Le nom du ou des auteurs ne doit pas apparaître sur la page résumé pour garantir le processus d'évaluation anonyme.

Joignez deux enveloppes pré-affranchies, portant vos nom et adresse (pour les projets venant de l'étranger, veuillez joindre deux coupons postaux internationaux). Nous utilisons ces enveloppes pour accuser réception du projet et pour vous informer des résultats de l'évaluation. **Tous les projets et tous les articles doivent nous parvenir au plus tard le 15 janvier 2001**. ***Les articles terminés et reçus avant le 15 janvier 2000*** pourront faire l'objet d'une publication. Pour plus d'informations, veuillez consulter notre site internet ou contactez nous directement

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Merci d'afficher ou de partager cette invitation avec vos confrères!

SOLICITUD DE ARTÍCULOS
MÉTODO DE LOS CASOS

INVESTIGACIÓN, APLICACIÓN Y REDACCIÓN
DECIMOSEPTIMO CONGRESO INTERNACIONALUNIVERSIDAD DE EUROPA CENTRAL

LUND, SUECIA

del 17 al 20 de Junio de 2001

"ENSEÑANZA CON CASOS Y A DISTANCIA"

con casos, multimedia, enseñanza de distancia, simulaciones y otros métodos interactivos

El método de los casos puede desempeñar un papel importante cuando se trata de resolver problemas y enseñar a resolverlos; es importante también cuando se trata de emprender y administrar cambios. Por lo tanto, este congreso ofrece a los participantes la posibilidad de aprender aún más sobre la pedagogía utilizando este método y métodos de enseñanza relacionados con él, en diferentes situaciones educativas. Los participantes tendrán la oportunidad de conocer a colegas de otros rincones del mundo, con quienes podrán desarrollar grupos de investigación y de enseñanza. Los congresos de la WACRA son foros interdisciplinarios y multinacionales para todos los catedráticos de las disciplinas y de los sectores profesionales que incluyen la administración de los negocios, la comunicación, la educación, la ingeniería, la historia, el derecho, la medicina, la sicología, la administración pública, el trabajo social y los profesionales dedicados a los negocios y a la industria, a la educación y al gobierno.

Se solicitan artículos que analicen tanto la teoría como la práctica, mediante el uso de casos, simulaciones, videos y otros métodos de instrucción relacionados con la solución de problemas, la administración del cambio y la innovación. Se dará prioridad a los artículos interdisciplinarios, internacionales y/o comparativos. Se favorecen artículos que discutan y situen la aplicación de casos en la universidad y en los programas de formación profesional en varios contextos y artículos que evaluen el método de los casos. Se aceptan artículos que traten de los desafíos (con posibilidad de soluciones) que encuentran los hombres de negocios y artículos que involucren la redacción y el desarrollo de casos verdaderos en situaciones diferentes (por ejemplo casos interculturales). Aun si el enfoque de los congresos de la WACRA es el método de los casos y el uso de este método como un instrumento de enseñanza y de ayuda a la solución de problemas, consideramos artículos académicos que situen el uso de este método en el campo de la investigación. La WACRA está particularmente interesada en artículos académicos que aumenten nuestro conocimiento de la colaboración que existe entre los miembros de los organismos internacionales. Se tiene previsto señalar la presentación más innovadora y el artículo más relevante.

Los proyectos presentados deben incluir tres copias de (1) la portada con las informaciones siguientes sobre el o los autores: título, nombre, institución, dirección, números de teléfono y fax, dirección electrónica, (2) un resumen del proyecto (que no exceda 4 páginas) o el artículo terminado (que no exceda 15 páginas). Véase las informaciones tocante a la redacción del manuscrito en nuestra página Web. El resumen debe indicar con claridad los objetivos, la estructura, la naturaleza del proyecto y corresponder a los criterios mencionados más arriba. El nombre del autor o autores no debe figurar en el resumen para proteger el sistema de evaluación anónima de los diferentes proyectos.

Mande dos sobres franqueables con su respectivo nombre y dirección (para los proyectos que vienen del extranjero, mande dos cupones de correo internacional). Se utilizan los dos sobres para acusar recibo del proyecto y para informarle del resultado de la evaluación. **Se deben recibir todos los proyectos y artículos antes del 15 de enero de 2001**. Una posibilidad de publicación se ofrece para ***los artículos terminados que se reciben antes del 15 de enero de 2001***. ¿Necesita más informaciones? Visite nuestra página Web o llame directamente

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¡Le agradecemos que anuncie o comparta esta invitación con sus colegas!

International Conference on Case Method Research and Application
WACRA®

Directions for Preparation of Your Manuscript, Abstract or Proposal

Prepare your manuscript according to the following guidelines and send a CAMERA READY hard copy and on diskette a "WordPerfect", "Microsoft Word" or ASCII text file prepared on IBM PC or compatible (DOS environment). If you cannot send the diskette or cannot format the paper, include your check in the amount of $60 (payable to WACRA, drawn on an US bank or international money order) and we arrange for typing.

1. Print your manuscript on 8-1/2 x 11" paper, SINGLE SPACED.
2. MAXIMUM length is 12 pages (NO EXCEPTIONS).
3. Print on ONE side of the paper.
4. Margins should be ONE INCH on **ALL FOUR SIDES OF THE PAPER.**
5. Use 10 pt standard type (NOT some fancy script type).
6. Print on a LASER JET or LETTER QUALITY printer, NOT on a dot matrix printer.
7. Make sure that the printed copy you send is of dark enough quality so that it is easily read.
8. List all ENDNOTES at the end of the paper (but before references).
9. List all REFERENCES (alphabetized) at the end of the paper. See back of this page for sample. When referencing an item, use the following style: [Chow, 1983]. **Note the square brackets.**
10. All paragraphs should be indented as shown on the back. Set your WordPerfect or Microsoft Word Tabs at 0.25" intervals relative to the left margin. **DO NOT SKIP LINES** BETWEEN PARAGRAPHS.
11. The first page should contain: Beginning on the **seventh** line from the top (1) the title, centered, ALL CAPITALIZED; drop two lines (2) the author's name (first name and last name, without titles), centered; on the next line (3) the author's affiliation (name of institution centered); on the following line (4) the city, state and country, ALL CAPITALIZED; drop 2 lines (5) the word "Abstract;" drop one line, begin abstract of the paper (100 words MAXIMUM, INDENTED .5 inches FROM THE LEFT AND RIGHT MARGINS); (6) after Abstract, drop one line and list keywords that will be used in your paper and (7) begin the paper after having dropped one line at the end of the keywords. **Use "tabs" to indent** at the beginning of each paragraph.
12. Tables and Figures should be numbered (1, 2, etc.), SINGLE SPACED, and PLACED IN THE TEXT. A one inch margin on all 4 sides must remain free. **All Tables and Figures (Drawings) must be camera ready**.
13. There can be up to THREE levels of HEADINGS. The FIRST level is CENTERED, ALL CAPITALIZED and bold; the SECOND level is FLUSH WITH THE LEFT MARGIN, ALL CAPITALIZED and bold; and the THIRD level is FLUSH WITH THE LEFT MARGIN (lower case characters) underlined.
14. To enable us to consider your contribution for publication, we need to receive your completed manuscript on or before the published deadline. Only those manuscripts which are accepted for presentation at the conference will be considered for publication.

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SAMPLE PAGE - TITLE OF THE PAPER

Hans E. Klein
WACRA®
NEEDHAM, MASSACHUSETTS, U.S.A.

Abstract

This is a sample page containing a sample abstract, short sample body, and references. Front and back of this instruction sheet are printed in Geneva Regular 10 pt (sans serif) and **Geneva Bold 10 pt (IBM PC)** fonts, except for the paper title on this page: **Times New Roman Bold 14 pt**. Notice how this abstract is indented .5 INCHES from both the left and right margins (which are both 1"). All headings (except third-level headings as below) including headings for "**TABLE 1, FIGURE 1, APPENDIX A**" etc. should be typed in upper case characters and bolded.

KEYWORDS: Provide descriptors of the main topics, e.g. Computer Literacy, Infrastructures, Trainers, International cooperation.

INTRODUCTION - FIRST-LEVEL HEADING

Above is an example of a first-level heading. Below is an example of a second-level heading. At the end of a sentence, after the period, insert **two** blank spaces. Use the "full" justification feature (left and right side aligned).

SECOND-LEVEL HEADING

Above is an example of a second-level section heading. The heading is flush left, in upper case characters and bold. Below is an example of a third-level heading. The third-level heading is (underlined) in lower case characters, except for the first word, nouns, etc.

Third-Level Heading

The third-level heading is flush to the left, in lower case characters and underlined. Included in this sentence is an example of a reference [Chow, 1983] appearing in **square brackets**. Avoid footnotes to the extent possible and use endnotes[1] instead.

ENDNOTES

1. This is an example of an endnote. All endnotes should be generated using the appropriate WordPerfect or Microsoft Word feature. Use Geneva 10 points. The endnotes should be placed at the end of the paper, before references. Immediately following the 'automatic note number' insert an "indent."

REFERENCES

Chow, C., "The Effects of Job Standard Tightness and Compensation Scheme on Performance: An Exploration of Linkages," Accounting Review (October 1983), pp. 667-685.

Previts, G. and B. Merino, A History of Accounting in America (John Wiley, 1979).

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